Advanced Care Paramedic

Medical Directives

ALS PCS v4.6.1

REGIONAL PARAMEDIC PROGRAM FOR EASTERN ONTARIO

The Emergency Health Services Branch of the Ministry of Health and Long Term Care Version 4.6.1 of the Advanced Life Support Patient Care Standards (ALS PCS) will now be the standard of care. These standards and guidelines include significant advances to the paramedic scope of practice since they were last published.

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REGIONAL PARAMEDIC PROGRAM FOR EASTERN ONTARIO

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To access the full document please refer to http://www.rppeo.ca

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Introduction

ADVANCED LIFE SUPPORT PATIENT CARE STANDARDS

Levels of Paramedics

In Ontario, there are 3 levels of qualification for paramedics which lead to Certification as a: Primary Care Paramedic (PCP), Advanced Care Paramedic (ACP), and Critical Care Paramedic (CCP). The qualification for each are set out in Ontario Regulation 257/00 made under the *Ambulance Act*, RSO 1990, c A-19. The qualifications for each include a requirement that the paramedic be authorized by a Medical Director of a Regional Base Hospital (RBH) to perform the controlled acts set out in Schedules 1, 2 and 3 to O. Reg 257/00.

A paramedic may be authorized by the Medical Director to perform controlled acts from the Schedule immediately above their Certification. In this circumstance, the paramedic is required to perform the controlled act to a specific standard as set out in the *Advanced Life Support Patient Care Standards* (ALS PCS). All advanced medical procedures that are not listed as controlled acts in Schedules 1, 2 and 3, shall also be performed as set out in the ALS PCS

Purpose of Standards

The ALS PCS reflects current practices for paramedics in Ontario and provides benchmarks for paramedic performance. It also communicates the standards of practice and care by paramedics in Ontario to paramedics, patients, other disciplines and the public in general.

Format of the Advanced Life Support Patient Care Standards

This document is comprised of a Preamble section and six (6) appendices: Appendix 1 – PCP Core Medical Directives; Appendix 2 – ACP Core Medical Directives; Appendix 3 – PCP Auxiliary Medical Directives; Appendix 4 – ACP Auxiliary Medical Directives; Appendix 5 – Chemical Exposure Medical Directives; and Appendix 6 – Certification Standard. Critical Care Paramedics and Advanced/Primary Care Flight Paramedics will perform controlled acts in accordance with the Base Hospital (BH) Medical Directives issued by the ORNGE Base Hospital Physician (BHP).

Use of the Medical Directives by Paramedics

These Medical Directives apply to paramedics who are authorized by a RBH Medical Director to provide patient care. Delegation of controlled acts in the ALS PCS to paramedics falls under the exclusive oversight of the RBH Programs.

General Structure of a Medical Directive

All Medical Directives follow the same format and are comprised of the following sections:

Indications:	The general medical complaint or problem to which the Medical Directive applies.
Conditions:	Clinical parameters that must be present for a procedure to be performed or for a medication to be administered.
Contraindications:	Clinical parameters that if present, preclude the performance of a procedure or the administration of a medication.
Treatment:	Description of the type of procedure to be performed or the dosing of a medication.
Clinical Considerations:	Key clinical points that provide general guidance to the proper performance of a procedure or the administration of a medication.

All of these sections must be taken into account before and during the implementation of a Medical Directive.

Auxiliary Medical Directives

Additional ("Auxiliary") skills may be delegated through use of the Auxiliary Medical Directives. Delegation of Auxiliary Medical Directives by a RBH Medical Director to paramedics is optional and may be introduced after consultation and mutual agreement between the RBH and the certified ambulance service that employs the paramedic. Some PCP and ACP Medical Directives contain the phrase, "(if available and authorized)". This phrase qualifies the skill or procedure as optional (*i.e.* auxiliary) even if included in PCP or ACP Medical Directives.

Consent to Treatment in Non-Emergency Situations

Except in emergency circumstances described below, paramedics shall obtain consent prior to administering treatment. If a patient is incapable of consenting to the treatment being proposed by a paramedic, consent may be given or refused on their behalf by the patient's substitute decision-maker (SDM). Consent may be expressed or implied. Implied consent may be assumed where a person provides a physical indication that they consent to the

treatment being proposed. For example, a patient who cannot speak but extends their hand to a paramedic after the paramedic indicates they are going to perform a simple procedure, such as a blood glucose determination, may be giving implied consent to the treatment.

The elements required for consent to treatment are:

- consent must be given by a person who is capable of giving consent with respect to treatment,
- consent must relate to the treatment,
- consent must be informed,
- consent must be given voluntarily, and
- consent must not be obtained through misrepresentation or fraud.

Consent to treatment is informed if, before it is given to the person, they have:

- received the following information that a reasonable person in the same circumstances would require in order to make a decision about the treatment:
    - the nature of the treatment,
    - the expected benefits of the treatment,
    - the material risks of the treatment,
    - the material side effects of the treatment,
    - alternative courses of action,
    - the likely consequences of not having the treatment; and
- received responses to their request for additional information about those matters.

Valid consent requires that a person has the capacity to provide consent. A person is presumed to have the capacity to provide consent with respect to treatment and a paramedic may rely on that presumption unless the paramedic has reasonable grounds to believe that the person is capable with respect to the treatment. A paramedic must perform a capacity assessment if it is not reasonable in the circumstances to presume the person is capable of consenting to the treatment.

A patient is capable with respect to treatment if the patient is:

- Able to **understand** the information that is relevant to making a decision about the treatment or alternatives beings proposed; **and**
- Able to **appreciate** the reasonably foreseeable consequences of a decision or lack of decision with respect to treatment.

If a patient is incapable of consenting to a proposed treatment, and the paramedic is aware or is made aware that the person has a prior capable wish with respect to the proposed treatment, they must respect that wish (for example, if the person does not wish to be resuscitated and a DNR Confirmation form is presented to the paramedics).

Consent to Treatment in Emergency Situations

Where the person for whom the treatment is being proposed is apparently experiencing severe suffering or is at risk of sustaining serious bodily harm if the treatment is not administered promptly, it is considered to be an emergency.

For situations involving consent to treatment in emergency situations, a paramedic shall comply with the applicable directions contained in the *Basic Life Support Patient Care Standards* (BLS PCS).

Refusal of Treatment

If a patient refuses treatment, either in whole or in part, a paramedic shall comply with the applicable directions contained in the BLS PCS.

Comprehensive Care

While initiating and continuing treatment prescribed by these Medical Directives, a paramedic must ensure that the patient simultaneously receives care in accordance with the BLS PCS.

It is acknowledged that there may be circumstances and situations where complying with ALS PCS is not clinically justified, possible, or prudent (*e.g.* multiple crews on scene, trapped patient, extenuating circumstances, competing patient care priorities). When treatment deviates from the standards, a paramedic must document the care provided, including reasoning for deviating from the ALS PCS.

Intravenous (IV) Access and Therapy by Primary Care Paramedics

There are 2 types of authorization for PCPs IV cannulation and therapy.

"PCP Assist IV" authorizes a trained and certified PCP to cannulate a peripheral IV at the request and under the direct supervision of an ACP. The patient must require a peripheral IV in accordance with the indications listed in the Intravenous and Fluid Therapy Medical Directive - Auxiliary. The ACP will perform all IV therapy in accordance with the Intravenous and Fluid Administration Medical Directive once intravenous access is obtained. PCPs authorized in PCP Assist IV are not authorized to administer IV therapy.

"PCP Autonomous IV" is authorization for a PCP to independently cannulate an IV according to their training and certification under the Intravenous and Fluid Therapy Medical Directive – Auxiliary. PCPs authorized in PCP Autonomous IV are authorized to administer IV therapy according to applicable Medical Directives.

Authorization for each type shall meet the requirements established by the provincial Medical Advisory Committee.

Home Medical Technology and Novel Medications

As community care advances, new home medical technologies and novel medications are being introduced for home use by highly trained patients and caregivers. They are generally used by patients with complex medical histories who may require emergent interventions which are not described in, or aligned with, the BLS PCS or ALS PCS.

A "home medical technology" is an external or internal mechanical device prescribed by a member of a regulated health profession for the purpose of treating a medical condition.

A "novel medication" is a self/caregiver-administered medication prescribed by a member of a regulated health profession that is required to treat patients with generally rare and unusually complex chronic medical conditions which are often end stage. The medication may be self/caregiver-administered by any route into any part of the body.

These can be encountered unexpectedly by paramedics without any prior knowledge that these technologies or medications are being used in the community. Paramedics may not be familiar with the use of these technologies or medications, even though they may be required to provide care.

In some cases, when Base Hospital Medical Directors are alerted to these devices, medications or care requirements, a local medical directive may be

issued to guide specific care for these patients. Such directives should be followed until further consideration by the Medical Advisory Committee.
A paramedic may assume patients or caregivers have knowledge about the technology or medication if they confirm that they were trained in its use and/or administration. A paramedic should advise the patient or caregiver to follow any specific steps or provide any advice about restarting/stopping the device or novel medication. A paramedic may only assist a patient within the authorized paramedic skill set.

When care requirements are uncertain, but the patient is stable, transport the patient. If the patient is unstable, consider patching to the BHP. Alternatively, consider contacting the responsible member of a regulated health profession (such as a physician).
A paramedic may follow written advice provided by their Base Hospital Medical Directors even if this advice is outside the conditions and contraindications of the BLS PCS and ALS PCS.

Patching

A paramedic should patch to the Base Hospital:

- When a medical directive contains a mandatory provincial patch point;

OR

- When a RBH introduces a mandatory BH patch point;

OR

- For situations that fall outside of these Medical Directives where the paramedic believes the patient may benefit from online medical direction that falls within the prescribed paramedic scope of practice;

OR

- There is uncertainty about the appropriateness of a medical directive, either in whole or in part.

In cases where a treatment option requires the prior authorization by the BHP (*i.e.* mandatory provincial patch point or mandatory BH patch point) AND the BHP cannot be reached despite reasonable attempts by the paramedic to establish contact, a paramedic may initiate the required treatment without the requisite online authorization if the patient is in severe distress and, in the paramedic's opinion, the medical directive would otherwise apply. Clinical judgement must be applied and an acceptable standard of care must be met. This may be based on peer and expert review. In such cases, a paramedic should continue attempts to contact the BHP after the treatment has been initiated. All patch failures must be reported in a timely manner in accordance with local policy and procedures. Paramedics should document the attempts to patch to the BH on the Ambulance Call Report (ACR).

If a BHP directs a paramedic to perform an assessment or intervention that exceeds the paramedic's scope of practice, the paramedic must advise the BHP of such and notify the physician that they cannot comply with the direction as it exceeds their scope of practice. In such cases, a paramedic should ask the BHP to provide alternative direction.

Incident Reporting

Paramedics shall adhere to their ambulance service policies and the *Ontario Ambulance Documentation Standards* (incorporated by reference in Ontario Regulation 257/00) for incident reporting. Paramedics shall also adhere to additional RBH policies regarding reporting of clinical care incidents to the RBH.

Responsibility of Care

While on scene, the highest level paramedic shall assess the patient and make a decision on the level of care required, and on the level of paramedic required for the care of the patient. The highest level paramedic is the ultimate patient care authority on the scene. If there is any disagreement between paramedics, the Base Hospital physician may be contacted. It is expected that when an intervention has been performed, the paramedic most appropriate for that intervention will remain responsible for the patient.

In all patient care, the highest level of paramedic is responsible for the care of the patient, including decisions on the level of care required during transport. A paramedic may choose to assign aspects of care and procedures to an alternate level paramedic, as long as the care and procedures are within that paramedic's scope of practice. Paramedics must alert the highest-level paramedic of any change of patient status.

When transferring care from one level of paramedic to another, paramedics shall provide:

- current CTAS level;
- a history of the patient's current problem(s) and relevant past medical history;
- pertinent physical findings;
- a summary of management at scene/enroute;
- the patient's response to treatment, including most recent vital signs; and
- the reason for transfer in cases of inter-facility transfers.

The transfer of responsibility of patient care is a critical juncture along the clinical care continuum. When transferring patient care to another health care provider (e.g. nurse, physician, etc.), a paramedic must comply with BLS PCS regarding such transfers.

Research

Clinical research is fundamental to the practice of medicine and the development of safer, more effective treatment options for patients. At times, research protocols require temporary changes to patient care standards. Changes to patient care standards will be approved and introduced by the MOH.

Conventions

"Conventions" refers to a consistent application of terms throughout the Medical Directives based on definitions below.

The word 'consider' is used repeatedly throughout the Medical Directives. Where this word appears, it indicates that a paramedic should initiate the treatment unless there is strong clinical rationale to withhold it. A paramedic must document their justification for withholding treatment on the ACR.

Medication Doses and Administration

Medication doses may be either in per kilogram or fixed doses, depending on common clinical practice. The number of recommended medication doses may be administered regardless of any previous self-administration by a patient. When more than one route of medication administration is listed, the order of preference for route of administration is from left to right. Clinical circumstances for each case should determine the final route chosen.

Pediatric medication doses can vary slightly according to the source of expert opinion. The pediatric medication doses in the ALS PCS are the preferred doses. However, medication doses as determined by an up-to-date version of a widely accepted pediatric emergency tape (*e.g.* Broselow Tape) are an acceptable alternative. Use of a pediatric emergency tape shall be documented on the ACR when it is used to determine a pediatric medication dose.

Medication doses may be calculated based upon weight or other factors and result in a fraction that cannot be measured accurately. Depending on the delivery method used, medication doses may require rounding from the exact dose calculated. In these cases, the medication dose delivered will be rounded to the closest dose that can accurately be measured.

AGE AND VITAL SIGNS

The general age cut off between adults and pediatrics is 18 years. There is a wide range of "normal" for vital signs in adults and especially pediatrics. As much as possible, ages for pediatrics and cut off points for vital signs have been kept consistent throughout the Medical Directives. However, clinical research and expert opinion have resulted in a number of exceptions which in each case has been deliberately chosen and is clearly noted in each Medical Directive. There is a deliberate gap in the definition of normotension and hypotension in adults.

ADULTS

Normotension SBP ≥100 mmHg
Hypotension SBP <90 mmHg
Heart rate Heart rate is always in beats per minute according to a cardiac monitor when it is applied. In situations where a cardiac monitor is not indicated then the heart rate is equal to the pulse rate.
Bradycardia HR <50 BPM
Tachycardia HR ≥100 BPM
Tachypnea RR ≥28 breath/min

PEDIATRICS

Age	Respiratory Rate	Heart Rate
0-3 months	30-60	90-180
3-6 months	30-60	80-160
6-12 months	25-45	80-140
1-3 yr	20-30	75-130
6 yr	16-24	70-110
10 yr	14-20	60-90

Normotension SBP ≥ 90 mmHg + (2 x age in years)
Hypotension SBP < 70 mmHg + (2 x age in years)
Weight (kg) (age x 2) + 10

HYPOGLYCEMIA
Age <2 years: glucometry <3.0 mmol/L
Age ≥2 years: glucometry <4.0 mmol/L

LOA (Level of Awareness)
The word 'altered' refers to a GCS that is less than normal for the patient.

The word 'unaltered' refers to a GCS that is normal for the patient.
This may be a GCS <15.

Commonly Used Abbreviations

The following abbreviations, in alphabetical order, appear in the Advanced Life Support Patient Care Standards:

A

ACP	Advanced Care Paramedic
ALS	Advanced Life Support
ALS PCS	Advanced Life Support Patient Care Standards
ASA	Acetylsalicylic acid
AV	Atrioventricular
AED	Automated external defibrillation

B

BH	Base Hospital
BHP	Base Hospital Physician
BLS	Basic Life Support
BLS PCS	Basic Life Support Patient Care Standards
BP	Blood pressure
BPM	Beats per minute
BVM	Bag-valve-mask

C

CCP	Critical Care Paramedic
COPD	Chronic obstructive pulmonary disease
cm	Centimeter
CPAP	Continuous positive airway pressure
CPR	Cardiopulmonary Resuscitation
CPSO	College of Physicians and Surgeons of Ontario
CTAS	Canadian Triage and Acuity Scale
CVA	Cerebral vascular accident
CVAD	Central venous access device

D

DKA	Diabetic ketoacidosis
DNR	Do Not Resuscitate

E

ECD	Electronic control device
ECG	Electrocardiogram
ED	Emergency department

EDD	Esophageal detection device
$ETCO_2$	End tidal carbon dioxide
ETT	Endotracheal tube

F

FiO_2	Fraction of inspired oxygen
FRI	Febrile respiratory infection

G

g	Gram
GCS	Glasgow Coma Scale
gtts	Drops

H

H_2O	Water
HR	Heart rate
Hx	History

I

IM	Intramuscular
IN	Intranasal
IO	Intraosseous
IV	Intravenous

J

J	Joule

K

kg	Kilogram

L

LOA	Level of awareness
LOC	Level of consciousness/loss of consciousness

M

Max.	Maximum
MAC	Medical Advisory Committee
mcg	Microgram

MDI	Metered dose inhaler
mg	Milligram
min	Minute
Min.	Minimum
mL/kg	Milliliter per kilogram
mmHg	Millimeters of mercury
MOHLTC	Ministry of Health and Long-Term Care
ms	Milliseconds

N

N/A	Not applicable
NaCl	Sodium chloride
nare	Nostril
NEB	Nebulized
NPA	Nasopharyngeal airway
NSAID	Non-steroidal anti-inflammatory drug

O

OBHG	Ontario Base Hospital Group
OPA	Oropharyngeal airway

P

Ped	Pediatric
PCP	Primary Care Paramedic
PO	By mouth/oral
PEA	Pulseless electrical activity
PRN	As needed

Q

q	Every

R

RBH	Regional Base Hospital
ROSC	Return of spontaneous circulation
RR	Respiratory rate

S

SC	Subcutaneous
SL	Sublingual
SBP	Systolic blood pressure

SpO_2	Saturation of peripheral oxygen
STEMI	ST-segment elevation myocardial infarction

T

TBI	Traumatic brain injury
TCA	Tricyclic antidepressant
TCP	Transcutaneous pacing
TOP	Topical
TOR	Termination of Resuscitation

U

URTI	Upper respiratory tract infection

V

VF	Ventricular Fibrillation
VT	Ventricular Tachycardia
VSA	Vital signs absent

W

WNL	Within normal limits

Reference and Educational Notes

The RBHs have created a companion document of reference and educational notes intended to assist paramedics in implementing these Medical Directives. This will facilitate regular updating of these notes without having to issue frequent changes to the standards. It is expected that paramedics have mastered the relevant information as part of initial training and certification and have maintained their knowledge through continuing education and self-study. The reference and educational notes do not define a standard of care; however, they should be considered useful in ensuring that an appropriate standard of care is met.

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Airway/Breathing

ADVANCED CARE PARAMEDIC MEDICAL DIRECTIVES

Orotracheal Intubation Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Need for ventilatory assistance or airway control;

AND

Other airway management is ineffective.

CONDITIONS

Lidocaine	Orotracheal Intubation
AGE: N/A	AGE: N/A
LOA: N/A	LOA: N/A
HR: N/A	HR: N/A
RR: N/A	RR: N/A
SBP: N/A	SBP: N/A
Other: Orotracheal Intubation	Other: N/A

CONTRAINDICATIONS

Lidocaine	Orotracheal Intubation
Allergy or sensitivity to lidocaine. Unresponsive patient.	Age <50 years **AND** current episode of asthma exacerbation **AND** not in or near cardiac arrest.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider topical **lidocaine** spray (to the hypopharynx) for "awake" orotracheal intubation:

	Route
	TOP
Dose	10 mg/spray
Max. dose	5mg/kg
Dosing interval	N/A
Max. # of doses	20 sprays

Consider **orotracheal intubation:**

With or without intubation facilitation devices. The maximum number of intubation attempts is 2.

Confirm **orotracheal tube placement:**

Method	**Method**
Primary	*Secondary*
$ETCO_2$ (Waveform capnography)	$ETCO_2$ (Non-waveform device)
	Visualization
	Ausculation
	Chest rise
	Esophageal detection device

CLINICAL CONSIDERATIONS

- An intubation attempt is defined as insertion of the laryngoscope blade into the mouth for the purposes of intubation.
- Confirmation of orotracheal intubation must use $ETCO_2$ (Waveform capnography). If waveform capnography is not available or not working then at least 3 secondary methods must be used. Additional secondary ETT placement confirmation devices may be authorized by the local medical director.
- ETT placement must be reconfirmed immediately after every patient movement.

Nasotracheal Intubation Medical Directive – *AUXILIARY*

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Need for ventilatory assistance **OR** airway control;
AND
Other airway management is ineffective.

CONDITIONS

Xylometazoline

AGE: N/A
LOA: N/A
HR: N/A
RR: N/A
SBP: N/A
Other: N/A

Lidocaine

AGE: N/A
LOA: N/A
HR: N/A
RR: N/A
SBP: N/A
Other: Gag reflex

Nasotracheal Intubation

AGE: ≥8 years
LOA: N/A
HR: N/A
RR: N/A
SBP: N/A
Other: Spontaneous Breathing

CONTRAINDICATIONS

Xylometazoline

Allergy or sensitivity to xylometazoline.

Lidocaine

Allergy or sensitivity to lidocaine.

Unresponsive patient.

Nasotracheal Intubation

Age <50 years **AND** current episode of asthma exacerbation **AND** not in or near cardiac arrest.

Suspected basal skull fracture or mid-face fracture.

Uncontrolled epistaxis.

Anticoagulant therapy (excludes ASA).

Bleeding disorders.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **xylometazoline 0.1%** spray:

	Route
	TOPICAL (TOP)
Dose	2 sprays/nare
Max. single dose	2 sprays/nare
Dosing interval	N/A
Max. # of doses	1

Consider topical **lidocaine** spray (to the nares and/or hypopharynx):

	Route
	TOPICAL (TOP)
Dose	10 mg/spray
Max. single dose	5 mg/kg
Dosing interval	N/A
Max. # of doses	20 sprays

Consider **nasotracheal intubation***:*

The maximum number of intubation attempts is 2.

Confirm **nasotracheal tube placement***:*

Method	**Method**
Primary	*Secondary*
$ETCO_2$ (Waveform capnography)	$ETCO_2$ (Non-waveform device)
	Ausculation
	Esophageal detection device
	Chest rise

CLINICAL CONSIDERATIONS

- A nasotracheal intubation attempt is defined as insertion of the nasotracheal tube into a nare.
- Confirmation of nasotracheal placement must use $ETCO_2$ (Waveform capnography). If wave-form capnography is not available or not working, then at least 2 secondary methods must be used.
- ETT placement must be reconfirmed immediately after every patient movement.

Supraglottic Airway Medical Directive – *AUXILIARY*

An Advanced Care Paramedic may provide the treatment prescribed in this auxiliary Medical Directive if authorized.

INDICATIONS

Need for ventilatory assistance **OR** airway control;

AND

Other airway management is ineffective.

CONDITIONS

Supraglottic Airway	
AGE:	N/A
LOA:	GCS = 3
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	Absent gag reflex

CONTRAINDICATIONS

Supraglottic Airway
Active vomiting.
Inability to clear the airway.
Airway edema.
Stridor.
Caustic ingestion.

TREATMENT

Patient • Drug • Dose • Route • Time.

Consider **supraglottic airway insertion:**

The maximum number of supraglottic airway attempts is 2.

Confirm **supraglottic airway placement:**

Method	Method
Primary	*Secondary*
$ETCO_2$ (Waveform capnography)	$ETCO_2$ (Non-waveform device)
	Auscultation
	Chest rise

CLINICAL CONSIDERATIONS

- An attempt at supraglottic airway insertion is defined as the insertion of the supraglottic airway into the mouth.
- Confirmation of supraglottic airway must use $ETCO_2$ (Waveform capnography). If waveform capnography is not available or is not working, then at least 2 secondary methods must be used.

Bronchoconstriction Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Respiratory distress;

AND

Suspected bronchoconstriction.

CONDITIONS

Salbutamol	
AGE:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

Epinephrine	
AGE:	N/A
WEIGHT:	N/A
LOA:	N/A
HR:	N/A
RR:	BVM ventilation required
SBP:	N/A
Other:	Hx of asthma

CONTRAINDICATIONS

Salbutamol	Epinephrine
Allergy or sensitivity to salbutamol.	Allergy or sensitivity to epinephrine.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **salbutamol:**

	Weight *<25 kg*		**Weight** *≥25 kg*	
	Route *MDI**	**Route** *NEB*	**Route** *MDI**	**Route** *NEB*
Dose	Up to 600 mcg (6 puffs)	2.5 mg	Up to 800 mcg (8 puffs)	5 mg
Max. single dose	600 mcg	2.5 mg	800 mcg	5 mg
Dosing interval	5-15 min PRN	5-15 min PRN	5-15 min PRN	5-15 min PRN
Max. # of doses	3	3	3	3

* 1 puff=100mcg

Consider **epinephrine:**

	Route *IM*
	Concentration *1 mg/mL = 1:1,000*
Dose	0.01 mg/kg**
Max. single dose	0.5 mg
Dosing interval	N/A
Max. # of doses	1

**The epinephrine dose may be rounded to the nearest 0.05 mg

CLINICAL CONSIDERATIONS

- Epinephrine should be the 1st medication administered if the patient is apneic. Salbutamol MDI may be administered subsequently using a BVM MDI adapter.
- Nebulization is contraindicated in patients with a known or suspected fever or in the setting of a declared febrile respiratory illness outbreak by the local medical officer of health.
- When administering salbutamol MDI, the rate of administration should be 100 mcg approximately every 4 breaths.
- A spacer should be used when administering salbutamol MDI.

Epinephrine 1 mg/mL = 1:1000 IM Dosing Chart

Dose (0.01 mg/kg) is rounded to the nearest 0.05mg Use a 1 mL syringe			
AGE	**WEIGHT**	**DOSE (mg)**	**VOLUME (mL)**
3 months	5 kg	**0.05 mg**	**0.05 mL**
6 months	8 kg	**0.08 mg**	**0.10 mL**
9 months	10 kg	**0.10 mg**	**0.10 mL**
1 year	12 kg	**0.12 mg**	**0.10 mL**
2 years	14 kg	**0.14 mg**	**0.15 mL**
3 years	16 kg	**0.16 mg**	**0.15 mL**
4 years	18 kg	**0.18 mg**	**0.20 mL**
5 years	20 kg	**0.20 mg**	**0.20 mL**
6 years	22 kg	**0.22 mg**	**0.20 mL**
7 years	24 kg	**0.24 mg**	**0.25 mL**
8 years	26 kg	**0.26 mg**	**0.25 mL**
9 years	28 kg	**0.28 mg**	**0.30 mL**
10 years	30 kg	**0.30 mg**	**0.30 mL**
11 years	32 kg	**0.32 mg**	**0.30 mL**
12 years	34 kg	**0.34 mg**	**0.35 mL**
13 years	36 kg	**0.36 mg**	**0.35 mL**
14 years	38 kg	**0.38 mg**	**0.40 mL**
Adult	50 kg	**0.50 mg**	**0.50 mL**

Note: Dosage administered can be calculated by the weight based calculation in the Medical Directive and/or by using the above chart. Administered dosage in the chart may be rounded to the nearest volume increment that can be accurately measured.

Moderate to Severe Allergic Reaction Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Exposure to a probable allergen;

AND

Signs and/or symptoms of a moderate to severe allergic reaction (including anaphylaxis).

CONDITIONS

Epinephrine	
AGE:	N/A
WEIGHT:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	For anaphylaxis only.

Diphenhydramine	
AGE:	N/A
WEIGHT:	≥25 kg
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Epinephrine	Diphenhydramine
Allergy or sensitivity to epinephrine.	Allergy or sensitivity to diphenhydramine.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **epinephrine**:

	Route *IM* **Concentration** *1 mg/mL = 1:1,000*
Dose	0.01 mg/kg*
Max. single dose	0.5 mg
Dosing interval	Minimum 5 min
Max. # of doses	2

* The epinephrine dose may be rounded to the nearest 0.05 mg

Consider **diphenhydramine** (if available and authorized):

	Weight *≥25 kg to <50 kg*		**Weight** *≥50 kg*	
	Route *IV*	**Route** *IM*	**Route** *IV*	**Route** *IM*
Dose	25 mg	25 mg	50 mg	50 mg
Max. single dose	25 mg	25 mg	50 mg	50 mg
Dosing interval	N/A	N/A	N/A	N/A
Max. # of doses	1	1	1	1

CLINICAL CONSIDERATIONS

- Epinephrine should be the first medication administered in anaphylaxis.

Croup Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Severe respiratory distress;

AND

Stridor at rest;

AND

Current history of URTI;

AND

Barking cough OR recent history of a barking cough.

CONDITIONS

Epinephrine	
AGE:	<8 years
LOA:	N/A
HR:	<200 bpm
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Epinephrine
Allergy or sensitivity to epinephrine

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **epinephrine:**

	Age *<1 year*		**Age** *≥1 year to <8 years*
	Weight *<5 kg*	**Weight** *≥5 kg*	**Weight** *N/A*
	Route *NEB*	**Route** *NEB*	**Route** *NEB*
	Concentration *1 mg/mL = 1:1,000*	**Concentration** *1 mg/mL = 1:1,000*	**Concentration** *1 mg/mL = 1:1,000*
Dose	0.5 mg	2.5 mg	5 mg
Max. single dose	0.5 mg	2.5 mg	5 mg
Dosing interval	N/A	N/A	N/A
Max. # of doses	1	1	1

CLINICAL CONSIDERATIONS

- The minimum initial volume for nebulization is 2.5 mL.

Tension Pneumothorax Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Suspected tension pneumothorax;
AND
Critically ill **OR** VSA;
AND
Absent or severely diminished breath sounds on the affected side(s).

CONDITIONS

Needle Thoracostomy	
AGE:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	Hypotension or VSA
Other:	N/A

CONTRAINDICATIONS

Needle Thoracostomy
N/A

TREATMENT

⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP for authorization to perform needle thoracostomy

Consider **Needle Thoracostomy**

CLINICAL CONSIDERATIONS

- Needle thoracostomy may only be performed at the 2nd intercostal space in the midclavicular line.

Continuous Positive Airway Pressure (CPAP) Medical Directive – *AUXILIARY*

An Advanced Care Paramedic may provide the treatment prescribed in this auxiliary Medical Directive if authorized.

INDICATIONS

Severe respiratory distress;

AND

Signs and/or symptoms of acute pulmonary edema **OR** COPD.

CONDITIONS

CPAP	
AGE:	≥18 years
LOA:	N/A
HR:	N/A
RR:	Tachypnea
SBP:	Normotension
Other:	SpO_2 <90% or accessory muscle use

CONTRAINDICATIONS

CPAP
Asthma exacerbation.
Suspected pneumothorax.
Unprotected or unstable airway.
Major trauma or burns to the head or torso.
Tracheostomy.
Inability to sit upright.
Unable to cooperate.

TREATMENT

Consider **CPAP:**

Initial setting	5 cm H_2O	Or equivalent flow rate of device as per BH direction
Titration increment	2.5 cm H_2O	Or equivalent flow rate of device as per BH direction
Titration interval	5 min	
Maximum setting	15 cm H_2O	Or equivalent flow rate of device as per BH direction

Consider increasing **FiO_2** (if available):

Initial FiO_2	50-100%
FiO_2 increment (if available on device)	SpO_2 <92% despite treatment and/or 10cm H_2O pressure or equivalent flow rate of device as per BH direction
Maximum FiO_2	100%

Confirm **CPAP pressure by manometer** (if available)

CLINICAL CONSIDERATIONS

- CPAP may be briefly interrupted to provide medications when necessary.
- The positive pressure in the thorax may impede ventricular filling resulting in decreased preload.
- Patients should be continuously monitored for signs of hypo-perfusion.

Endotracheal and Tracheostomy Suctioning Medical Directive

An Advanced Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Patient with endotracheal or tracheostomy tube;

AND

Airway obstruction or increased secretions.

CONDITIONS

Suctioning	
AGE:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Suctioning
N/A

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **suctioning:**

	Infant	Child	Adult
Dose	Suction at 60-100 mmHg	Suction at 100-120 mmHg	Suction at 100-150 mmHg
Max. single dose	N/A	N/A	N/A
Dosing interval	1 minute	1 minute	1 minute
Max. # of doses	5	5	5

CLINICAL CONSIDERATIONS

- Pre-oxygenate with 100% oxygen.
- In an alert patient, whenever possible, have patient cough to clear airway prior to suctioning.
- Do not exceed 10 seconds of suctioning.

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Emergency Tracheostomy Tube Reinsertion Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Patient with existing tracheostomy where the inner and/or outer cannula(s) have been removed from the airway;

AND

Respiratory distress

AND

Inability to adequately ventilate

AND

There is no family member or caregiver who is available and knowledgeable to replace the tracheostomy cannula

CONDITIONS

Emergency Tracheostomy Tube Reinsertion

AGE: N/A
LOA: N/A
HR: N/A
RR: N/A
SBP: N/A
Other: N/A

CONTRAINDICATIONS

Emergency Tracheostomy Tube Reinsertion

Inability to landmark or visualize

TREATMENT

Consider Emergency Tracheostomy Tube Reinsertion

The maximum number of attempts is 2.

CLINICAL CONSIDERATIONS

- A reinsertion attempt is defined as the insertion of the cannula into the tracheostomy.
- A new replacement inner cannula is preferred over cleaning and reusing an existing one.
- Replacing the outer cannula with a new or cleaned one is preferred.

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Cardiac/Circulation

ADVANCED CARE PARAMEDIC MEDICAL DIRECTIVES

Medical Cardiac Arrest Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Non-traumatic cardiac arrest.

CONDITIONS

CPR	
AGE:	N/A
LOA:	Altered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	Performed in 2 minute intervals

Manual Defibrillation	
AGE:	≥ 30 days
LOA:	Altered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	VF **OR** pulseless VT

AED Defibrillation	
AGE:	≥ 30 days
LOA:	Altered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	Defibrillation indicated If not using manual defibrillation

Epinephrine	
AGE:	≥ 30 days
LOA:	Altered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	Anaphylaxis suspected as causative event, IM route may be used

Amiodarone	
AGE:	≥ 30 days
LOA:	Altered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	VF **OR** pulseless VT

Lidocaine	
AGE:	≥ 30 days
LOA:	Altered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	VF **OR** pulseless VT where amiodarone is not available

0.9% NaCl Fluid Bolus

AGE: ≥ 30 days

LOA: Altered

HR: N/A

RR: N/A

SBP: N/A

Other: PEA

Any other rhythm where hypovolemia is suspected

CONTRAINDICATIONS

CPR

Obviously dead as per BLS PCS.

Meet conditions of *Do Not Resuscitate (DNR) Standard.*

Manual Defibrillation

Rhythms other than VF or pulseless VT.

AED Defibrillation

Non-shockable rhythm.

Epinephrine

Allergy or sensitivity to epinephrine.

Amiodarone

Allergy or sensitivity to amiodarone.

Lidocaine

Allergy or sensitivity to lidocaine.

Use / Availability of amiodarone.

0.9% NaCl Fluid Bolus

Fluid overload.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **CPR**

Consider **supraglottic airway insertion:** where more than OPA/NPA and BVM required and without interrupting CPR

Consider **Manual defibrillation**

	Age *≥30 days to <8 years*	**Age** *≥8 years*
Dose	1 defibrillation	1 defibrillation
Initial dose	2 J/kg	As per BH / manufacturer
Subsequent dose(s)	4 J/kg	As per BH / manufacturer
Dosing interval	2 min	2 min
Max. # of doses	N/A	N/A

Consider **AED defibrillation** (if not using manual defibrillation)

	Age *≥30 days to <8 years*		**Age** *≥8 years*
	With Pediatric Attenuator Cable	*Without Pediatric Attenuator Cable*	*N/A*
Dose	1 defibrillation	1 defibrillation	1 defibrillation
Max. single dose	As per BH / manufacturer	As per BH / manufacturer	As per BH / manufacturer
Dosing interval	2 min	2 min	2 min
Max. # of doses	N/A	N/A	N/A

Consider **epinephrine:**
(if anaphylaxis is suspected as the causative event of the cardiac arrest)

	Route *IM*
	Concentration 1 mg/mL = 1:1,000
Dose	0.01 mg/kg*
Max. single dose	0.5 mg
Dosing interval	N/A
Max. # of doses	1

* The epinephrine dose may be rounded to the nearest 0.05 mg

Consider **epinephrine:**

	Age *≥30 days to <12 years*		**Age** *≥12 years*	
	Route		**Route**	
	IV/IO/CVAD	*ETT*	*IV / IO /CVAD*	*ETT*
Solution	0.1 mg/mL (1:10,000)	1 mg/mL (1:1,000)	0.1 mg/mL (1:10,000)	as per BH
Dose	0.01 mg/kg*	0.1 mg/kg (max 2 mg)	1 mg	2 mg
Min. single dose	0.1 mg	1 mg	1 mg	2 mg
Dosing interval	4 min	4 min	4 min	4 min
Max. # of doses	N/A	N/A	N/A	N/A

* The epinephrine dose may be rounded to the nearest 0.05 mg

Consider **amiodarone**

	Age ≥30 days to <12 years	Age ≥12 years
	Route	Route
	IV / IO / CVAD	*IV / IO / CVAD*
Initial Dose	5 mg/kg	300 mg
Max. initial dose	300 mg	300 mg
Subsequent dose(s)	5 mg/kg	150 mg
Max. repeat dose	150 mg	150 mg
Dosing interval	4 min	4 min
Max. # of doses	2	2

Consider **lidocaine** (if not using amiodarone)

	Age *≥30 days to <12 years*		Age *≥12 years*	
	Route		Route	
	IV / IO /CVAD	*ETT*	*IV / IO / CVAD*	*ETT*
Dose	1 mg/kg	2 mg/kg	1.5 mg/kg	3 mg/kg
Min. single dose	N/A	N/A	N/A	N/A
Dosing interval	4 min	4 min	4 min	4 min
Max. # of doses	2	2	2	2

Consider **0.9% NaCl fluid bolus**

	Age *≥30 days to <12 years*	Age *≥12 years*
	Route	Route
	IV / IO / CVAD	*IV / IO / CVAD*
Infusion	20 mL/kg	20 mL/kg
Infusion interval	Immediate	Immediate
Reassess every	100 mL	250 mL
Max. volume	2,000 mL	2,000 mL

Consider **intubation** (if the airway is not being adequately managed)

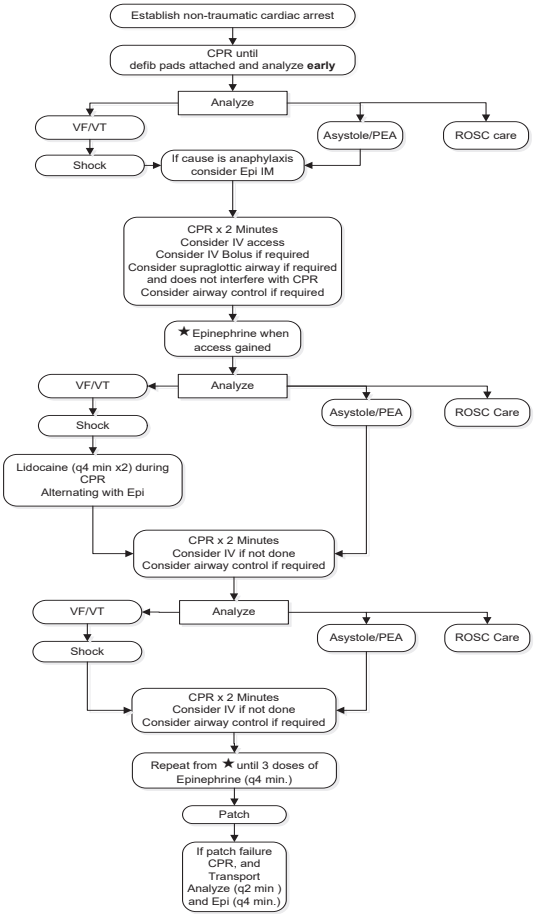
⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP following 3 rounds of epinephrine (or after 3rd analyses if no IV/IO/CVAD/ETT access). If the BH patch fails, transport to the closest appropriate receiving facility following the 4th epinephrine administration (or 4th analysis if no IV/IO/CVAD/ETT access).

CLINICAL CONSIDERATIONS

- Consider very early transport after the 1st analysis (and defibrillation if indicated) in the following settings: pregnancy presumed to be ≥20 weeks gestation (fundus above umbilicus, ensure manual displacement of uterus to left), hypothermia, airway obstruction, suspected pulmonary embolus, medication overdose, toxicology, or other known reversible cause of arrest not addressed.
- Similarly, plan for extrication and transport for patients with refractory ventricular fibrillation and pediatric cardiac arrest (after 3 analyses), ensure quality CPR can be continued.
- In cardiac arrest associated with opioid overdose, continue standard medical cardiac arrest directive. There is no clear role for routine administration of naloxone in confirmed cardiac arrest.
- Follow the *Deceased Patient Standard* once TOR has been implemented.
- The IV and IO routes of medication administration are preferred over the ETT route. However, ETT administration may be used if the IV/IO routes are delayed (*e.g.* ≥5 min).
- If hyperkalemia is suspected as the causative event of the cardiac arrest, consider patching early for calcium gluconate.

ACP Medical Cardiac Arrest Algorithm



Trauma Cardiac Arrest Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Cardiac arrest secondary to severe blunt or penetrating trauma.

CONDITIONS

CPR		Manual Defibrillation		AED Defibrillation	
AGE:	N/A	AGE:	≥30 days	AGE:	≥30 days
LOA:	Altered	LOA:	Altered	LOA:	Altered
HR:	N/A	HR:	N/A	HR:	N/A
RR:	N/A	RR:	N/A	RR:	N/A
SBP:	N/A	SBP:	N/A	SBP:	N/A
Other:	Performed in 2 minute intervals	Other:	VF **OR** pulseless VT	Other:	Defibrillation indicated If not using manual defibrillation

Trauma TOR	
AGE:	≥16 years
LOA:	Altered
HR:	0
RR:	0
SBP:	N/A
Other:	No palpable pulses **AND** No defibrillation delivered **AND** Monitored HR =0 **OR** Monitored HR >0 with the closest ED ≥30 min transport time away.

CONTRAINDICATIONS

CPR	Manual Defibrillation	AED Defibrillation
Obviously dead as per BLS PCS. Meet conditions of *Do Not Resuscitate (DNR) Standard.*	Rhythms other than VF or pulseless VT.	Non-shockable rhythm.

Trauma TOR

Age <16 years.

Defibrillation delivered.

Monitored HR >0 and closest ED <30 min transport time away.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **CPR**

Consider **Manual Defibrillation:**

	Age *≥30 days to <8 years*	Age *≥8 years*
Dose	1 defibrillation	1 defibrillation
Initial dose	2 J/kg	As per BH / manufacturer
Dosing interval	N/A	N/A
Max. # of doses	1	1

Consider **AED defibrillation** (if not using manual defibrillation):

	Age		Age
	≥30 days to <8 years		*≥8 years*
	With Pediatric Attenuator Cable	*Without Pediatric Attenuator Cable*	*N/A*
Dose	1 defibrillation	1 defibrillation	1 defibrillation
Max. single dose	As per BH / manufacturer	As per BH / manufacturer	As per BH / manufacturer
Dosing interval	N/A	N/A	N/A
Max. # of doses	1	1	1

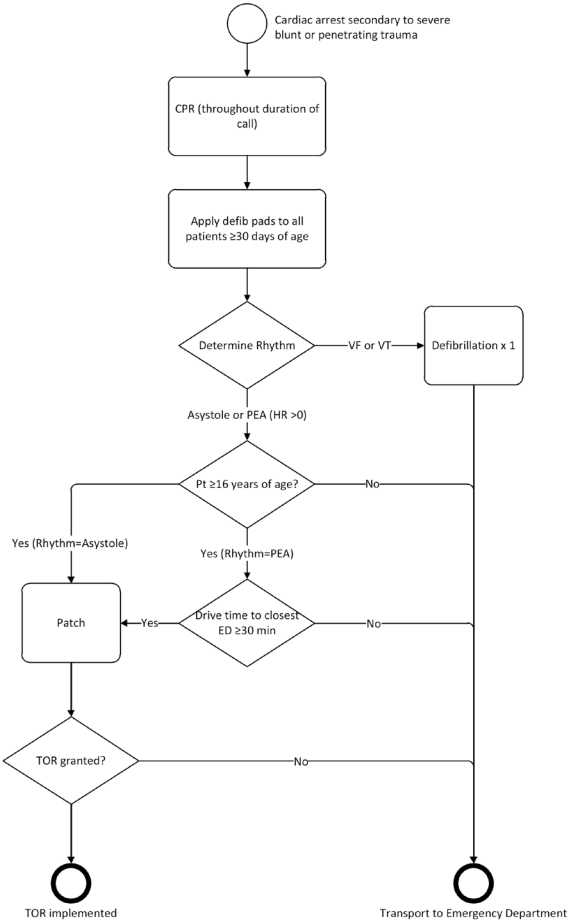
⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP for authorization to apply the **Trauma TOR** if applicable. If the BH patch fails, or the **Trauma TOR** does not apply, transport to the closest appropriate receiving facility following the 1st analysis/defibrillation.

CLINICAL CONSIDERATIONS

- If no obvious external signs of significant blunt trauma, consider medical cardiac arrest and treat according to the appropriate medical cardiac arrest directive.

Treatment – Algorithm for Trauma Arrest



Hypothermia Cardiac Arrest Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Cardiac arrest secondary to severe hypothermia.

CONDITIONS

CPR	Manual Defibrillation	AED Defibrillation
AGE: N/A	AGE: ≥30 days	AGE: ≥30 days
LOA: Altered	LOA: Altered	LOA: Altered
HR: N/A	HR: N/A	HR: N/A
RR: N/A	RR: N/A	RR: N/A
SBP: N/A	SBP: N/A	SBP: N/A
Other: Performed in 2 minute intervals	Other: VF **OR** pulseless VT	Other: Defibrillation indicated if not using manual defibrillation

CONTRAINDICATIONS

CPR	Manual Defibrillation	AED Defibrillation
Obviously dead as per BLS PCS. Meet conditions of *Do Not Resuscitate (DNR) Standard.*	Rhythms other than VF or pulseless VT.	Non-shockable rhythm.

TREATMENT

Consider **CPR**

Consider **Manual Defibrillation:**

	Age *≥30 days to <8 years*	**Age** *≥8 years*
Dose	1 defibrillation	1 defibrillation
Initial dose	2 J/kg	As per BH / manufacturer
Dosing interval	N/A	N/A
Max. # of doses	1	1

Consider **AED Defibrillation:** (if not using manual defibrillation)

	Age ≥30 days to <8 years	**Age** ≥8 years	
	With Pediatric attenuator cable	*Without Pediatric attenuator cable*	*N/A*
Dose	1 defibrillation	1 defibrillation	1 defibrillation
Max. single dose	As per BH / manufacturer	As per BH / manufacturer	As per BH / manufacturer
Dosing interval	N/A	N/A	N/A
Max. # of doses	1	1	1

CLINICAL CONSIDERATIONS

- Transport to the closest appropriate facility without delay following the 1st analysis.

Foreign Body Airway Obstruction Cardiac Arrest Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Cardiac arrest secondary to an airway obstruction.

CONDITIONS

CPR	Manual Defibrillation	AED Defibrillation
AGE: N/A	AGE: ≥30 days	AGE: ≥30 days
LOA: Altered	LOA: Altered	LOA: Altered
HR: N/A	HR: N/A	HR: N/A
RR: N/A	RR: N/A	RR: N/A
SBP: N/A	SBP: N/A	SBP: N/A
Other: Performed in 2 minute intervals	Other: VF **OR** pulseless VT	Other: Defibrillation indicated, if not using manual defibrillation

CONTRAINDICATIONS

CPR	Manual Defibrillation	AED Defibrillation
Obviously dead as per BLS PCS. Meet conditions of *Do Not Resuscitate (DNR) Standard*.	Rhythms other than VF or pulseless VT.	Non-shockable rhythm.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **CPR**

Consider **foreign body removal** (utilizing BLS PCS maneuvers and/or laryngoscope and Magill forceps)

Consider **Manual Defibrillation:**

	Age *≥30 days to <8 years*	**Age** *≥8 years*
Dose	1 defibrillation	1 defibrillation
Initial dose	2 J/kg	As per BH / manufacturer
Dosing interval	N/A	N/A
Max. # of doses	1	1

Consider **AED Defibrillation:** (if not using manual defibrillation)

	Age ≥30 days to <8 years	**Age** ≥8 years	
	With Pediatric Attenuator Cable	*Without Pediatric Attenuator Cable*	*N/A*
Dose	1 defibrillation	1 defibrillation	1 defibrillation
Max. single dose	As per BH / manufacturer	As per BH / manufacturer	As per BH / manufacturer
Dosing interval	N/A	N/A	N/A
Max. # of doses	1	1	1

CLINICAL CONSIDERATIONS

- If the patient is in cardiac arrest following removal of the obstruction, initiate management as a medical cardiac arrest.
- If the obstruction cannot be removed, transport to the closest appropriate facility without delay following the 1st analysis.

Neonatal Resuscitation Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Neonatal patient.

CONDITIONS

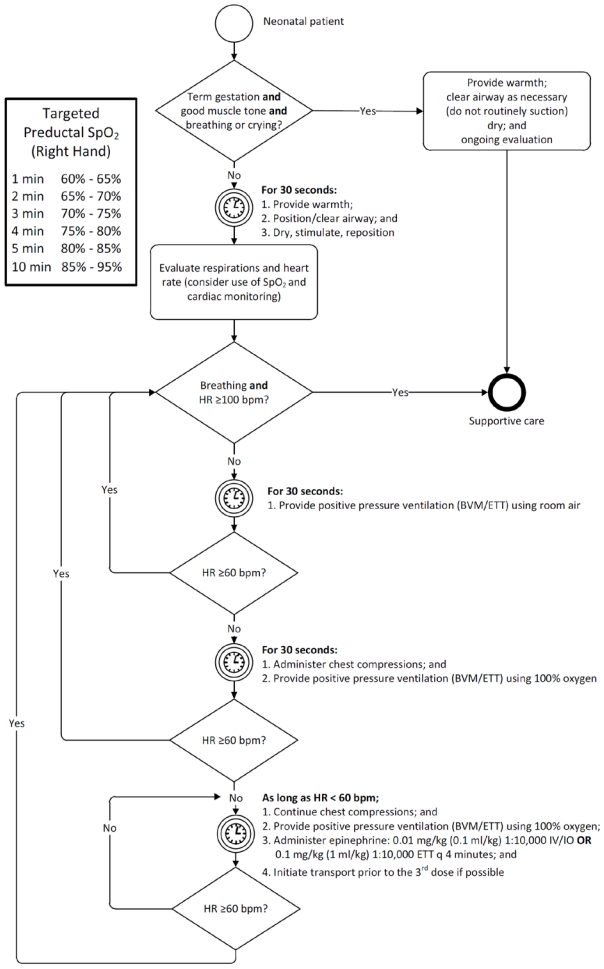
Resuscitation	
AGE:	<30 days of age
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Resuscitation
N/A

TREATMENT

Patient • Drug • Dose • Route • Time.


Neonatal patient
Term gestation and good muscle tone and breathing or crying?
Yes
Provide warmth; clear airway as necessary (do not routinely suction) dry; and ongoing evaluation
No
For 30 seconds:
1. Provide warmth;
2. Position/clear airway; and
3. Dry, stimulate, reposition
Evaluate respirations and heart rate (consider use of SpO2 and cardiac monitoring)
Targeted Preductal SpO2 (Right Hand)
1 min 60% - 65%
2 min 65% - 70%
3 min 70% - 75%
4 min 75% - 80%
5 min 80% - 85%
10 min 85% - 95%
Breathing and HR ≥100 bpm?
Yes
Supportive care
No
For 30 seconds:
1. Provide positive pressure ventilation (BVM/ETT) using room air
Yes
HR ≥60 bpm?
Yes
No
For 30 seconds:
1. Administer chest compressions; and
2. Provide positive pressure ventilation (BVM/ETT) using 100% oxygen
HR ≥60 bpm?
Yes
No
As long as HR < 60 bpm;
1. Continue chest compressions; and
2. Provide positive pressure ventilation (BVM/ETT) using 100% oxygen;
3. Administer epinephrine: 0.01 mg/kg (0.1 ml/kg) 1:10,000 IV/IO OR 0.1 mg/kg (1 ml/kg) 1:10,000 ETT q 4 minutes; and
4. Initiate transport prior to the 3rd dose if possible
No
HR ≥60 bpm?

CLINICAL CONSIDERATIONS

- If neonatal resuscitation is required, initiate cardiac monitoring and pulse oximetry monitoring.

Return of Spontaneous Circulation (ROSC) Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Patient with return of spontaneous circulation (ROSC) after the resuscitation was initiated.

CONDITIONS

0.9% NaCl Fluid Bolus	
AGE:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	Hypotension
Other:	Chest auscultation is clear

Dopamine	
AGE:	≥ 8 years
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	Hypotension
Other:	N/A

CONTRAINDICATIONS

0.9% NaCl Fluid Bolus
Fluid overload.
SBP ≥90 mmHg.

Dopamine
Allergy or sensitivity to dopamine.
Tachydysrhythmias excluding sinus tachycardia.
Mechanical shock states.
Hypovolemia.
Pheochromocytoma.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **optimizing ventilation and oxygenation**

Titrate oxygenation 94%-98%.

Avoid hyperventilation and target $ETCO_2$ to 30-40 mmHg with continuous waveform capnography (if available).

Consider **0.9% NaCl fluid bolus:**

	Age *<12 years* **Route** *IV/IO/CVAD*	**Age** *≥ 12 years* **Route** *IV/IO/CVAD*
Infusion	10 mL/kg	10 mL/kg
Infusion interval	Immediate	Immediate
Reassess every	100 mL	250 mL
Max. volume	1,000 mL	1,000 mL

Consider **Dopamine:**

	Age *≥8 years* **Route** *IV*
Initial Infusion Rate	5 mcg/kg/min
Titration increment	5 mcg/kg/min
Titration interval	5 min
Max infusion rate	20 mcg/kg/min

NOTE: Titrate dopamine to achieve a SBP of ≥90 to <110mmHg. If discontinuing dopamine electively, do so gradually over 5-10 minutes.

Consider ***12 lead ECG acquisition and interpretation***

CLINICAL CONSIDERATIONS

- Consider initiating transport in parallel with the above treatment.

800mcg/mL Dopamine Dosing Guide

DOPAMINE INFUSION RATE (mL/hr or drops/min with a microdrip set)

Weight (kg)	Drip Rate (drops/min)				
	2 (mcg/kg/minute)	5 (mcg/kg/minute)	10 (mcg/kg/minute)	15 (mcg/kg/minute)	20 (mcg/kg/minute)
5	1	2	4	6	8
10	2	4	8	11	15
15	2	6	11	17	23
20	3	8	15	23	30
25	4	9	19	28	38
30	5	11	23	34	45
35	5	13	26	39	53
40	6	15	30	45	60
45	7	17	34	51	68
50	8	19	38	56	75
55	8	21	41	62	83
60	9	23	45	68	90
65	10	24	49	73	98
70	11	26	53	79	105
75	11	28	56	84	113
80	12	30	60	90	120
85	13	32	64	96	128
90	14	34	68	101	135
95	14	36	71	107	143
100	15	38	75	113	150
105	16	39	79	118	158
110	17	41	83	124	165
115	17	43	86	129	173
120	18	45	90	135	180

Cardiac Ischemia Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Suspected cardiac ischemia.

CONDITIONS

ASA		Nitroglycerin		Morphine	
AGE:	≥18 years	AGE:	≥18 years	AGE:	≥18 years
LOA:	Unaltered	LOA:	Unaltered	LOA:	Unaltered
HR:	N/A	HR:	60-159 bpm	HR:	N/A
RR:	N/A	RR:	N/A	RR:	N/A
SBP:	N/A	SBP:	Normotension	SBP:	Normotension
Other:	Able to chew and swallow	Other:	Prior history of nitroglycerin use **OR** IV access obtained	Other:	Severe pain (≥7/10 on pain scale)

CONTRAINDICATIONS

ASA	Nitroglycerin	Morphine
Allergy or sensitivity to ASA or NSAIDs. If asthmatic, no prior use of ASA. Current active bleeding. CVA or TBI in the previous 24 hours.	Allergy or sensitivity to nitrates. Phosphodiesterase inhibitor use within the previous 48 hours. SBP drops by one-third or more of its initial value after nitroglycerin is administered. 12-lead ECG compatible with Right Ventricular MI.	Allergy or sensitivity to morphine. SBP drops by one-third or more of its initial value after morphine is administered.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **ASA:**

	Route
	PO
Dose	160-162 mg
Max. single dose	162 mg
Dosing interval	N/A
Max. # of doses	1

Consider **12-lead ECG acquisition and interpretation** for STEMI

Consider **Nitroglycerin:**

	STEMI	
	NO	YES
	SBP	**SBP**
	≥100 mmHg	*≥100 mmHg*
	Route	**Route**
	SL	*SL*
Dose	0.3 mg **OR** 0.4 mg	0.3 mg **OR** 0.4 mg
Max. single dose	0.4 mg	0.4 mg
Dosing interval	5 min	5 min
Max. # of doses	6	3

Consider **Morphine:** (after the 3rd dose of nitroglycerin or if nitroglycerin is contraindicated)

	Route
	IV
Dose	2 mg
Max. single dose	2 mg
Dosing interval	5 min
Max. # of doses	5

CLINICAL CONSIDERATIONS

- Suspect a Right Ventricular MI in all inferior STEMIs and perform 15-lead ECG to confirm (ST-elevation ≥1mm in V4R). Do not administer nitroglycerin to a patient with a Right Ventricular STEMI.

Acute Cardiogenic Pulmonary Edema Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Moderate to severe respiratory distress;

AND

Suspected acute cardiogenic pulmonary edema.

CONDITIONS

Nitroglycerin	
AGE:	≥18 years
LOA:	N/A
HR:	60-159 bpm
RR:	N/A
SBP:	Normotension
Other:	N/A

CONTRAINDICATIONS

Nitroglycerin
Allergy or sensitivity to nitrates.
Phosphodiesterase inhibitor use within the previous 48 hours.
SBP drops by one-third or more of its initial value after nitroglycerin is administered.

TREATMENT

5Rs *Patient · Drug · Dose · Route · Time.*

Consider **Nitroglycerin:**

	SBP ≥100 mmHg to <140 mmHg	SBP ≥140 mmHg	
	IV or Hx*	IV or Hx*	IV or Hx*
	Yes	No	Yes
	Route	Route	Route
	SL	SL	SL
Dose	0.3 **or** 0.4 mg	0.3 **or** 0.4 mg	0.6 **or** 0.8 mg
Max. single dose	0.4 mg	0.4 mg	0.8 mg
Dosing interval	5 min	5 min	5 min
Max. # of doses	6	6	6

*Hx refers to a patient with a prior history of nitroglycerin use

Consider **12-lead ECG acquisition and interpretation**

CLINICAL CONSIDERATIONS

N/A

Cardiogenic Shock Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

STEMI-positive 12-lead ECG;

AND

Cardiogenic shock.

CONDITIONS

0.9% NaCl Fluid Bolus	
AGE:	≥18 years
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	Hypotension
Other:	Chest auscultation is clear

Dopamine	
AGE:	≥18 years
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	Hypotension
Other:	N/A

CONTRAINDICATIONS

0.9% NaCl
Fluid overload.
SBP ≥90 mmHg.

Dopamine
Allergy or sensitivity to dopamine.
Tachydysrhythmia excluding sinus tachycardia.
Mechanical shock states.
Hypovolemia.
Pheochromocytoma.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **0.9% NaCl Fluid Bolus:**

	Age *≥18 years*
	Route IV/IO/CVAD
Infusion	10 mL/kg
Infusion interval	N/A
Reassess every	250 mL
Max. volume	1,000 mL

NOTE: If NaCl bolus contraindicated due to pulmonary crackles, consider dopamine.

Consider **Dopamine:**

	Route *IV*
Initial infusion rate	5 mcg/kg/min
Titration increment	5 mcg/kg/min
Titration interval	5 min
Max. infusion rate	20 mcg/kg/min

NOTE: Titrate dopamine to achieve a SBP of ≥90 to <110 mmHg. If discontinuing dopamine electively, do so gradually over 5-10 minutes.

CLINICAL CONSIDERATIONS

- Contact BHP if patient is bradycardic.

Symptomatic Bradycardia Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Bradycardia;

AND

Hemodynamic instability.

CONDITIONS

Atropine	
AGE:	≥18 years
LOA:	N/A
HR:	<50 bpm
RR:	N/A
SBP:	Hypotension
Other:	N/A

Transcutaneous Pacing	
AGE:	≥18 years
LOA:	N/A
HR:	<50 bpm
RR:	N/A
SBP:	Hypotension
Other:	N/A

Dopamine	
AGE:	≥18 years
LOA:	N/A
HR:	<50 bpm
RR:	N/A
SBP:	Hypotension
Other:	N/A

CONTRAINDICATIONS

Atropine
Allergy or sensitivity to atropine.
Hemodynamic stability.
Hypothermia.
History of heart transplant.

Transcutaneous Pacing
Hemodynamic stability.
Hypothermia.

Dopamine
Allergy or sensitivity to dopamine.
Tachydysrhythmias excluding sinus tachycardia.
Mechanical shock states.
Hypovolemia.
Pheochromocytoma.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **rhythm determination**

Consider ***12 lead ECG acquisition and interpretation*** (if this won't delay therapy)

Consider **Atropine:**

	Route
	IV
Dose	0.5 mg
Max. single dose	0.5 mg
Dosing interval	5 min
Max. # of doses	2

⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP for authorization to proceed with transcutaneous pacing and/or a dopamine infusion.

Consider **Transcutaneous Pacing**

Consider **Dopamine:**

	Route
	IV
Initial infusion rate	5 mcg/kg/min
Titration increment	5 mcg/kg/min
Titration interval	5 min
Max. infusion rate	20 mcg/kg/min

NOTE: Titrate dopamine to achieve a SBP of ≥90 to <110 mmHg. If discontinuing dopamine electively, do so gradually over 5-10 minutes.

CLINICAL CONSIDERATIONS

- Atropine may be beneficial in the setting of sinus bradycardia, atrial fibrillation, 1st degree AV block, or 2nd degree Type I AV block.
- A single dose of atropine should be considered for 2nd degree Type II or 3rd degree AV blocks with fluid bolus while preparing for TCP **OR** if there is a delay in implementing TCP **OR** if TCP is unsuccessful.

Tachydysrhythmia Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Symptomatic Tachydysrhythmia.

CONDITIONS

Valsalva Maneuver

AGE: ≥18 years
LOA: Unaltered
HR: ≥150 bpm
RR: N/A
SBP: Normotension
Other: Narrow complex and regular rhythm

Adenosine

AGE: ≥18 years
LOA: Unaltered
HR: ≥150 bpm
RR: N/A
SBP: Normotension
Other: Narrow complex and regular rhythm

Amiodarone

AGE: ≥18 years
LOA: Unaltered
HR: ≥120 bpm
RR: N/A
SBP: Normotension
Other: Wide complex and regular rhythm

Lidocaine

AGE: ≥18 years
LOA: Unaltered
HR: ≥120 bpm
RR: N/A
SBP: Normotension
Other: Wide complex and regular rhythm

Synchronized Cardioversion

AGE: ≥18 years
LOA: N/A
HR: ≥120 bpm (wide) **OR** ≥150 bpm (narrow)
RR: N/A
SBP: Hypotension
Other: Altered mental status, ongoing chest pain, other signs of shock

CONTRAINDICATIONS

Valsalva Maneuver	Adenosine	Amiodarone
Sinus tachycardia or atrial fibrillation or atrial flutter.	Allergy or sensitivity to adenosine. Sinus tachycardia or atrial fibrillation or atrial flutter. Patient taking dipyridamole or carbamazepine. Bronchoconstriction on exam.	Allergy or sensitivity to amiodarone.

Lidocaine	Synchronized Cardioversion
Allergy or sensitivity to lidocaine.	N/A

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **rhythm determination** (confirm regularity)

Consider **12-lead ECG acquisition and interpretation** to confirm QRS width (if this won't delay therapy)

Consider **Valsalva Maneuver:**

Perform a maximum of 2 attempts lasting 10 to 20 seconds duration each.

Consider **Adenosine:**

	Route
	IV
Initial dose	6 mg
Subsequent does	12 mg
Dosing interval	2 min
Max. # of doses	2

⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP for authorization to proceed with amiodarone or lidocaine or if monomorphic wide complex regular rhythm for adenosine.

Consider **Amiodarone** (if available and authorized) **OR Lidocaine** (if not using amiodarone):

	Medication *Amiodarone* **Route** *IV**	**Medication** *Lidocaine* **Route** *IV*
Initial dose	150 mg	1.5 mg/kg
Subsequent dose	150 mg	0.75 mg/kg
Max. single dose	150 mg	150 mg
Dosing interval	10 min	10 min
Max. # of doses	2	3

*Amiodarone should be administered by IV infusion over 10 min.

⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP for authorization to proceed with synchronized cardioversion.

Consider **Synchronized Cardioversion:**
Administer up to 3 synchronized shocks in accordance with BHP direction and energy settings. (In the setting of a patch failure, the energy settings to be used are 100 J, 200 J and the maximum manufacturer setting.)

CLINICAL CONSIDERATIONS

N/A

Hyperkalemia Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Suspected hyperkalemia in patients at high risk, including:

Currently on dialysis; **OR**

History of end-stage renal disease; **OR**

Relevant incident history (i.e. prolonged crush injury);

AND

One of the following clinical situations:

Cardiac Arrest; **OR**

Pre-arrest with 12-lead ECG changes associated with Hyperkalemia.

CONDITIONS

Calcium Gluconate 10%	
AGE:	≥18 years
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

Salbutamol	
AGE:	≥18 years
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Calcium Gluconate	Salbutamol
Current Digoxin use.	Allergy or sensitivity to salbutamol.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **12-lead ECG acquisition and interpretation**

⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP for authorization to proceed with calcium gluconate and salbutamol therapies.

Consider **Calcium Gluconate 10%:**

	Route
	IV/IO/CVAD
Dose	1 g (10 mL) over 2-3 minutes
Max. single dose	1g (10 mL)
Dosing interval	30 minutes
Max. # of doses	2

Consider **Salbutamol**:

	Route	
	*MDI**	*NEB*
Dose	1,600 mcg (16 puffs)	10 mg
Max. single dose	1,600 mcg	10 mg
Dosing interval	Immediate	Immediate
Max. # of doses	2	2

*1 puff=100mcg

Consider **12-lead ECG acquisition and interpretation**

CLINICAL CONSIDERATIONS

- In the Indications, the pre-arrest patient would be presenting with one or more of: hypotension, altered levels of awareness, or symptomatic bradycardia.
- 12-lead acquisition is intended for the patient not in cardiac arrest to establish the QRS duration before and after treatment.
- 12-lead changes suggestive of hyperkalemia are wide and bizarre QRS complexes [≥120 ms], peaked T waves, loss of P waves and/or a QRS complex with a "sine wave" appearance.
- Whenever possible, both calcium gluconate and salbutamol should be administered as the two medications have different modes of action.
- If appropriate, refer to the Symptomatic Bradycardia, Tachydysrhythmia, or Cardiac Arrest Medical Directives for further management of these patients.
- Sodium bicarbonate is not a very effective agent for hyperkalemia and so should not routinely be administered.
- Caution that calcium gluconate should only be administered in an IV/IO/CVAD that is running well.
- Calcium gluconate and sodium bicarbonate should not be mixed or administered in the same IV without flushing well.

Intravenous and Fluid Therapy Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Actual or potential need for intravenous medication **OR** fluid therapy.

CONDITIONS

IV Cannulation	
AGE:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

0.9% NaCl Fluid Bolus	
AGE:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	Hypotension
Other:	N/A

CONTRAINDICATIONS

IV Cannulation	0.9% NaCl Fluid Bolus
Suspected fracture proximal to the access site.	Fluid overload. SBP ≥90 mmHg.

TREATMENT

Consider **IV cannulation**

Consider **0.9% NaCl** maintenance infusion:

	Age *<12 years* **Route** *IV / IO / CVAD*	**Age** *≥12 years* **Route** *IV / IO / CVAD*
Infusion	15 mL/hr	30-60 mL/hr
Infusion interval	N/A	N/A
Reassess every	N/A	N/A
Max. volume	N/A	N/A

⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP for authorization to administer NaCl bolus to patients <12 years with suspected Diabetic Ketoacidosis (DKA).

Consider **0.9% NaCl fluid bolus:**

	Age <12 years Route IV / IO / CVAD	Age ≥12 years Route IV / IO / CVAD
Infusion	20 mL/kg	20 mL/kg
Infusion interval	Immediate	Immediate
Reassess every	100 mL	250 mL
*Max. volume**	2,000 mL	2,000 mL

*The maximum volume of NaCl is lower for patients in cardiogenic shock.

5Rs ***Patient · Drug · Dose · Route · Time.***

CLINICAL CONSIDERATIONS

- "PCP Assist IV" authorizes a PCP to cannulate a peripheral IV at the request and under the direct supervision of an ACP. The ACP will perform all further IV therapy in accordance with the *Intravenous and Fluid Therapy Medical Directive* once intravenous access is obtained. PCPs authorized for PCP Assist IV are not authorized to administer IV fluid or medication therapy.
- Adult IO and CVAD procedures are auxiliary Medical Directives described elsewhere. Fluid administration via the IO or CVAD routes only apply to paramedics authorized to perform these procedures.
- Microdrips and/or volume control administration sets should be considered when IV access is indicated for patients <12 years of age.

Adult Intraosseous Medical Directive – *AUXILIARY*

An Advanced Care Paramedic may provide the treatment prescribed in this auxiliary Medical Directive if authorized.

INDICATIONS

Actual or potential need for intravenous medication **OR** fluid therapy;
AND
IV access is unobtainable;
AND
Cardiac arrest or near arrest state.

CONDITIONS

IO	
AGE:	≥12 years
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

IO
Fracture or crush injuries proximal to the access site.
Suspected or known replacement / prostheses immediately proximal to the access site.

TREATMENT

Consider **IO access**

CLINICAL CONSIDERATIONS

N/A

Pediatric Intraosseous Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Actual or potential need for intravenous medication **OR** fluid therapy;
AND
Intravenous access is unobtainable;
AND
Cardiac arrest or near-arrest state.

CONDITIONS

IO	
AGE:	<12 years
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

IO
Fracture or crush injuries or suspected or known replacement / prosthesis proximal to the access site.

TREATMENT

Consider **IO access**

CLINICAL CONSIDERATIONS

N/A

CENTRAL VENOUS ACCESS DEVICE ACCESS MEDICAL DIRECTIVE – AUXILIARY

An Advanced Care Paramedic may provide the treatment prescribed in this auxiliary Medical Directive if authorized.

INDICATIONS

Actual or potential need for intravenous medication **OR** fluid therapy;

AND

IV access is unobtainable;

AND

Cardiac arrest or near arrest state.

CONDITIONS

CVAD Access	
AGE:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	Patient has a pre-existing accessible central venous catheter in place

CONTRAINDICATIONS

CVAD Access
N/A

TREATMENT

Consider ***CVAD access***

CLINICAL CONSIDERATIONS

N/A

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Level of Consciousness

ADVANCED CARE PARAMEDIC MEDICAL DIRECTIVES

Hypoglycemia Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Agitation; **OR**

Altered LOA; **OR**

Seizure; **OR**

Symptoms of stroke.

CONDITIONS

Dextrose	
AGE:	N/A
LOA:	Altered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	Hypoglycemia

Glucagon	
AGE:	N/A
LOA:	Altered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	Hypoglycemia

CONTRAINDICATIONS

Dextrose	Glucagon
Allergy or sensitivity to dextrose.	Allergy or sensitivity to glucagon. Pheochromocytoma.

5Rs *Patient · Drug · Dose · Route · Time.*

Consider **glucometry**

Consider **Dextrose:** *(D10W pre-mixed)*

	Age *<30 days* **Concentration** *D10W* **Route** *IV*	**Age** *≥30 days* **Concentration** *D10W* **Route** *IV*
Dose	0.2 g/kg (2 mL/kg)	0.2 g/kg (2 mL/kg)
Max. single dose	5 g (50 mL)	10 g (100 mL)
Dosing interval	10 min	10 min
Max. # of doses	2	2

Consider **Dextrose:** *(D50W diluted as required if not using D10W)*

	Age *<30 days* **Concentration** *D10W* **Route** *IV*	**Age** *≥30 days to <2 years* **Concentration** *D25W* **Route** *IV*	**Age** *≥2 years* **Concentration** *D50W* **Route** *IV*
Dose	0.2 g/kg (2 mL/kg)	0.5 g/kg (2mL/kg)	0.5 g/kg (1 mL/kg)
Max. single dose	5 g (50 mL)	10 g (40 mL)	25 g (50 mL)
Dosing interval	10 min	10 min	10 min
Max. # of doses	2	2	2

Consider **Glucagon:** *(if not using dextrose)*

	Weight <25 kg	**Weight** ≥25 kg
	Route IM	**Route** IM
Dose	0.5 mg	1 mg
Max. single dose	0.5 mg	1 mg
Dosing interval	20 min	20 min
Max. # of doses	2	2

CLINICAL CONSIDERATIONS

- If the patient responds to dextrose or glucagon, they may receive oral glucose or other simple carbohydrates.
- If only mild signs or symptoms are exhibited, the patient may receive oral glucose or other simple carbohydrates instead of dextrose or glucagon.
- If a patient initiates an informed refusal of transport, a final set of vital signs including blood glucometry must be attempted and documented.

Seizure Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Active generalized motor seizure.

CONDITIONS

Midazolam	
AGE:	N/A
LOA:	Unresponsive
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Midazolam
Allergy or sensitivity to midazolam.
Hypoglycemia.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **Midazolam:**

	Route			
	IV	*IM*	*IN*	*Buccal*
Dose	0.1 mg/kg	0.2 mg/kg	0.2 mg/kg	0.2 mg/kg
Max. single dose	5 mg	10 mg	10 mg	10 mg
Dosing interval	5 min	5 min	5 min	5 min
Max. # of doses	2	2	2	2

CLINICAL CONSIDERATIONS

- Conditions such as cardiac arrest and hypoglycemia often present as seizure and should be considered by a paramedic.

Opioid Toxicity Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Altered LOC;

AND

Respiratory depression;

AND

Inability to adequately ventilate;

AND

Suspected opioid overdose.

CONDITIONS

Naloxone	
AGE:	≥12 years
LOA:	Altered
HR:	N/A
RR:	<10 breaths/min
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Naloxone
Allergy or sensitivity to naloxone.
Uncorrected hypoglycemia.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **Naloxone:**

	Route SC	Route IM	Route IN	Route IV
Dose	0.8 mg	0.8 mg	0.8 mg	Up to 0.4 mg
Max. single dose	0.8 mg	0.8 mg	0.8 mg	0.4 mg
Dosing interval	10 min	10 min	10 min	immediate
Max. # of doses	3	3	3	3*

*For the IV route, titrate naloxone only to restore the patient's respiratory status.

CLINICAL CONSIDERATIONS

- Naloxone may unmask alternative toxidromes in mixed overdose situations (leading to possible seizures, hypertensive crisis, *etc.*).
- Naloxone is shorter acting than most narcotics and these patients are at high risk of having a recurrence of their narcotic effect. Every effort should be made to transport the patient to the closest appropriate receiving facility for ongoing monitoring.
- Combative behaviour should be anticipated following naloxone administration and paramedics should protect themselves accordingly, thus the importance of gradual titrating (if given IV) to desired clinical effect: respiratory rate ≥10, adequate airway and ventilation, not full alertness. If adequate ventilation and oxygenation can be accomplished with a BVM and basic airway management, this is preferred over naloxone administration.

Suspected Adrenal Crisis Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

A patient with primary adrenal failure who is experiencing clinical signs of adrenal crisis.

CONDITIONS

Hydrocortisone	
AGE:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	Paramedics are presented with a vial of hydrocortisone for identified patient; **AND** Age-related hypoglycemia; **OR** GI symptoms (vomiting, diarrhea, abdominal pain); **OR** Syncope; **OR** Temperature ≥ 38ºC; **OR** Suspected/history of fever; **OR** Altered level of awareness; **OR** Age-related tachycardia; **OR** Age related hypotension

CONTRAINDICATIONS

Hydrocortisone
Allergy or sensitivity to hydrocortisone.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **Hydrocortisone:**

	Route
	IM
Dose	2 mg/kg*
Max. single dose	100 mg
Dosing interval	N/A
Max. # doses	1

*Dose should be rounded to the nearest 10 mg

CLINICAL CONSIDERATIONS

- Patients treated under this directive require ongoing monitoring at the closest appropriate receiving facility.

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Pain/Sedation/Nausea

ADVANCED CARE PARAMEDIC MEDICAL DIRECTIVES

Analgesia Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Pain

CONDITIONS

Acetaminophen	
AGE:	≥12 years
LOA:	Unaltered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

Ibuprofen	
AGE:	≥12 years
LOA:	Unaltered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

Ketorolac	
AGE:	≥12 years
LOA:	Unaltered
HR:	N/A
RR:	N/A
SBP:	Normotension
Other:	Restricted to those who are unable to tolerate oral medications

Morphine	
AGE:	≥1 year
LOA:	Unaltered
HR:	N/A
RR:	N/A
SBP:	Normotension
Other:	Severe Pain

Fentanyl	
AGE:	≥1 year
LOA:	Unaltered
HR:	N/A
RR:	N/A
SBP:	Normotension
Other:	Severe Pain

CONTRAINDICATIONS

Acetaminophen
Acetaminophen use within previous 4 hours
Allergy or sensitivity to acetaminophen
Hx of liver disease
Active vomiting
Unable to tolerate oral medication
Suspected ischemic chest pain

Ibuprofen
NSAID and Ibuprofen use within previous 6 hours
Allergy or sensitivity to ASA or NSAIDs
Patient on anticoagulation therapy
Current active bleeding
Hx of peptic ulcer disease or GI bleed
Pregnant
If asthmatic, no prior use of ASA or other NSAIDs
CVA or TBI in the previous 24 hours
Known renal impairment
Active vomiting
Unable to tolerate oral medication
Suspected ischemic chest pain

Ketorolac

NSAID or Ibuprofen use within previous 6 hours

Allergy or sensitivity to ASA or NSAIDs

Patient on anticoagulation therapy

Current active bleeding

Hx of peptic ulcer disease or GI bleed

Pregnant

If asthmatic, no prior use of ASA or other NSAIDs

CVA or TBI in the previous 24 hours

Known renal impairment

Suspected ischemic chest pain

Morphine

Allergy or sensitivity to morphine

Treatment of headache

Treatment of chronic pain

SBP drops by one-third or more of its initial value after morphine is administered

Suspected ischemic chest pain (refer to Cardiac Ischemia Medical Directive for suspected cardiac ischemia)

Fentanyl

Allergy or sensitivity to fentanyl

Treatment of headache

Treatment of chronic pain

SBP drops by one-third or more of its initial value after fentanyl is administered

Suspected ischemic chest pain

TREATMENT

Consider ***acetaminophen***

	Age ≥12 years to <18 years	**Age** ≥18 years
Route	*PO*	*PO*
Dose	500-650 mg	960-1,000 mg
Max. single dose	650 mg	1,000 mg
Dosing interval	N/A	N/A
Max. # doses	1	1

Consider ***ibuprofen***

Route	Age ≥12 years *PO*
Dose	400 mg
Max. single dose	400 mg
Dosing interval	N/A
Max. # doses	1

Consider ***ketorolac***

Route	Age ≥12 years *IM/IV*
Dose	10-15 mg
Max. single dose	15 mg
Dosing interval	N/A
Max. # doses	1

⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP for authorization and dosage verification before administering morphine or fentanyl for children < 12 years old

Consider ***morphine***

Route	Age ≥1 year to <18 years *IV/SC*	Age ≥18 years *IV/SC*
Dose	0.05-0.1 mg/kg	2 - 10 mg
Max. single dose	5 mg	10 mg
Dosing interval	15 min	15 mins
Max. # of doses	4	4
Max. cumulative dose	10 mg	20 mg

Consider ***fentanyl (if available and authorized)***

Route	Age ≥1 year to <18 years *IV/IN*	Age ≥18 years *IV/IN*
Dose	Up to 1 mcg/kg	25 – 75 mcg
Max. single dose	75 mcg	75 mcg
Dosing interval	5 min	5 mins
Max. # of doses	4	4
Max. cumulative dose	225 mcg	225 mcg

CLINICAL CONSIDERATIONS

- Whenever possible, consider co-administration of acetaminophen and ibuprofen.
- Suspected renal colic patients should routinely be considered for ketorolac **and** morphine or fentanyl.
- Exercise caution when using narcotics in opioid naïve patients and patients ≥65 years older as they may be more sensitive to dosages.
- Consider starting with lower doses. When higher doses of morphine (5-10 mg) or fentanyl (50-75 mcg) are given intravenously for severe pain, consider administering medication in small aliquots q 3 minutes until desired effect or max. single dose is reached to avoid nausea and vomiting.
- Fentanyl should not be used in combination with morphine unless authorized by BHP.
- The maximum volume of fentanyl that may be administered IN is 1mL per nare.

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Procedural Sedation Medical Directive – *AUXILIARY*

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Post-intubation;
OR
Transcutaneous pacing.

CONDITIONS

Midazolam	
AGE:	≥18 years
LOA:	N/A
HR:	N/A
RR:	≥10/min*
SBP:	Normotension
Other:	N/A

*Non-intubated patients only

CONTRAINDICATIONS

Midazolam
Allergy or sensitivity to midazolam.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **Midazolam:**

	Route
	IV
Dose	2.5-5 mg
Max. single dose	5 mg
Dosing interval	5 min
Max. total dose	10 mg
Max. # doses	2

CLINICAL CONSIDERATIONS

N/A

Combative Patient Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Combative or violent or agitated behaviour that requires sedation for patient safety.

CONDITIONS

Midazolam	
AGE:	≥18 years
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	Normotension
Other:	No reversible causes (e.g. hypoglycemia, hypoxia, hypotension)

Ketamine	
AGE:	≥18 years
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	Normotension
Other:	Suspected excited delirium, severe violent psychosis No reversible causes (e.g. hypoglycemia, hypoxia, hypotension)

CONTRAINDICATIONS

Midazolam
Allergy or sensitivity to midazolam.

Ketamine
Allergy or sensitivity to ketamine.
Known history of asthma.
Known pregnancy.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

⚠ Mandatory Provincial Patch Point ⚠

Patch to BHP for authorization to proceed with midazolam or ketamine if unable to assess the patient for normotension or reversible causes.

Consider **Midazolam:**

Route	Age ≥18 years IV/ IM
Dose	2.5-5 mg
Max. single dose	5 mg
Dosing interval	5 min
Max. total dose	10 mg
Max. # doses	2

Consider **Ketamine:** (if available and authorized)

Route	Age ≥18 years to <65 years IM	Age ≥65 years IM
Dose	5 mg/kg	3 mg/kg
Max. single dose	500 mg	300 mg
Dosing interval	N/A	N/A
Max. # doses	1	1

CLINICAL CONSIDERATIONS

- Do not co-administer midazolam and ketamine unless direction received from BHP.
- If ketamine emergence reaction develops, a BHP patch is required if further sedation orders are required.
- Consider obtaining IV access once patient has been sedated.
- $ETCO_2$ monitoring is recommended once patient has been sedated.

Nausea / Vomiting Medical Directive – *AUXILIARY*

An Advanced Care Paramedic may provide the treatment prescribed in this Auxiliary Medical Directive if authorized.

INDICATIONS

Nausea;

OR

Vomiting.

CONDITIONS

Dimenhydrinate
AGE: N/A
Weight: ≥25 kg
LOA: Unaltered
HR: N/A
RR: N/A
SBP: N/A
Other: N/A

CONTRAINDICATIONS

Dimenhydrinate
Allergy or sensitivity to dimenhydrinate or other antihistamines. Overdose on antihistamines or anticholinergics or tricyclic antidepressants.

TREATMENT

5Rs *Patient • Drug • Dose • Route • Time.*

Consider **Dimenhydrinate:**

	Weight ≥25 kg to <50 kg		Weight ≥50 kg	
	Route *IV*	**Route** *IM*	**Route** *IV*	**Route** *IM*
Dose	25 mg	25 mg	50 mg	50 mg
Max. single dose	25 mg	25 mg	50 mg	50 mg
Dosing interval	N/A	N/A	N/A	N/A
Max. # of doses	1	1	1	1

CLINICAL CONSIDERATIONS

- Prior to IV administration, dilute dimenhydrinate (concentration of 50mg/1mL) 1:9 with Normal Saline or sterile water. If administered IM do not dilute.

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Procedural

ADVANCED CARE PARAMEDIC MEDICAL DIRECTIVES

Electronic Control Device Probe Removal Medical Directive - *AUXILIARY*

An Advanced Care Paramedic may provide the treatment prescribed in this auxiliary Medical Directive if authorized.

INDICATIONS

Electronic Control Device probe(s) embedded in patient.

CONDITIONS

Probe Removal	
AGE:	≥18 years
LOA:	Unaltered
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Probe Removal
Probe(s) embedded above the clavicles, in the nipple(s), or in the genital area.

TREATMENT

Consider **Probe Removal**

CLINICAL CONSIDERATIONS

- Police may require preservation of the probe(s) for evidentiary purposes.
- This directive is for removal of ECD only and in no way constitutes treat and release, normal principles of patient assessment and care apply.

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Home Dialysis Emergency Disconnect Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Patient receiving home dialysis (hemo or peritoneal) and connected to dialysis machine and requires transport to the closest appropriate receiving facility;

AND

Patient is unable to disconnect ;

AND

There is no family member of caregiver who is available and knowledgeable in dialysis disconnect .

CONDITIONS

Home Dialysis Emergency Disconnect	
AGE:	N/A
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Home Dialysis Emergency Disconnect
N/A

TREATMENT

Consider **Home Dialysis Emergency Disconnect**

CLINICAL CONSIDERATIONS

- Generally, an emergency disconnect kit with materials and instructions can be found hanging from the dialysis machine or nearby on the wall.
- Ensure both the patient side and machine side of the connection are clamped before disconnecting and attaching end caps.

Emergency Dialysis Disconnect Prompt Card

Hemodialysis

- Clamp patient side tubing clamps
- Clamp machine side clamps
- Attach sterile Luer Lock caps to the ends of the patient tubing
- Disregard any alarms that may sound from the machine
- Secure patient tubing and cover with abdo pad

Continuous Ambulatory Peritoneal Dialysis (CAPD)

- Close the twist clamp
- Clamp both the fill and drain bag tubing with clamps supplied in disconnect kits
- Screw a sterile Luer Lock on the patient side tubing
  - Snap a sterile Luer Lock on the machine side tubing
- Secure patient tubing and cover with abdo pad

Automatic Peritoneal Dialysis (APD)

- Push “Stop” button on APD machine
- Close the twist clamp
- Disconnect the patient tubing from the machine tubing
- Screw a sterile mini cap on the patient tubing
- Snap a mini cap on the machine tubing
- Secure patient tubing and cover with abdo pad

(Chart provided by CPER)

Emergency Childbirth Medical Directive

An Advanced Care Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Pregnant patient experiencing labour; **OR**

Post-partum patient immediately following delivery.

CONDITIONS

Delivery

AGE: Childbearing years
LOA: N/A
HR: N/A
RR: N/A
SBP: N/A
Other: Second stage labour and/or imminent birth

Umbilical Cord Management

AGE: Childbearing years
LOA: N/A
HR: N/A
RR: N/A
SBP: N/A
Other: Cord complications **OR** if neonatal or maternal resuscitation is required **OR** due to transport considerations

External Uterine Massage

AGE: Childbearing years
LOA: N/A
HR: N/A
RR: N/A
SBP: N/A
Other: Post-placental delivery

CONTRAINDICATIONS

Delivery

N/A

Umbilical Cord Management

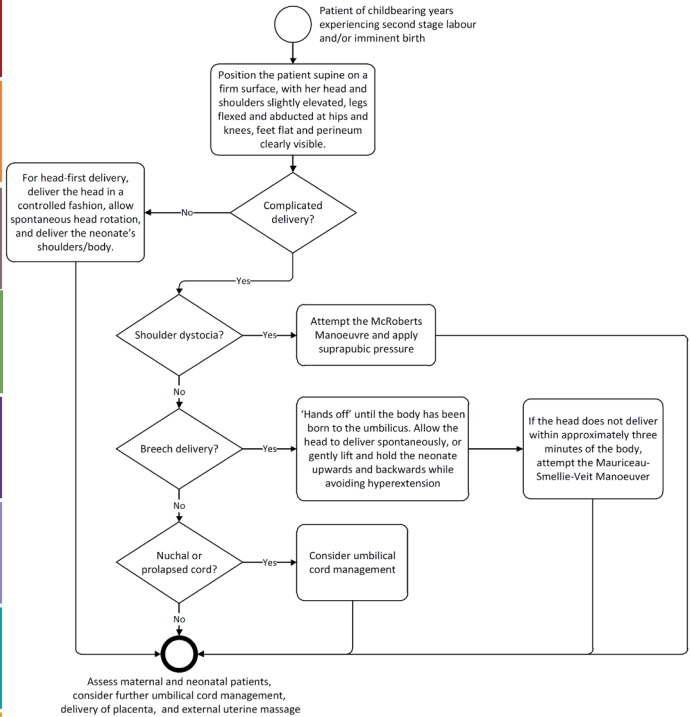
N/A

External Uterine Massage

N/A

TREATMENT

Consider **Delivery**



Consider **Umbilical Cord Management**

If a cord prolapse is present, the fetal part should be elevated to relieve pressure on the cord. Assist the patient into a knee-chest position or exaggerated Sims position, and insert gloved fingers/hand into the vagina to apply manual digital pressure to the presenting part which is maintained until transfer of care in hospital.

If a nuchal cord is present and loose, slip cord over the neonate's head. Only if a nuchal cord is tight and cannot be slipped over the neonate's head, clamp and cut the cord, encourage rapid delivery.

Following delivery of the neonate, the cord should be clamped and cut immediately if neonatal or maternal resuscitation is required. Otherwise, after pulsations have ceased (approximately 2-3 minutes), clamp the cord in two places and cut the cord.

Consider **External Uterine Massage**

CLINICAL CONSIDERATIONS

If the patient presents with limb-presentation, do not attempt to push the limb back into the vagina; discourage the patient from pushing, cover the limb using a dry sheet to maintain warmth, and initiate transport as per the *Load and Go Patient Standard* of the BLS PCS.

If the labour if failing to progress, discourage the patient from pushing or bearing down during contractions.

If delivery has not occurred at scene within approximately ten minutes of initial assessment, consider transport in conjunction with the following:

a. Patient assessment findings:
    i. Lack of progression of labour
    ii. Multiple births expected;
    iii. Neonate presents face-up;
    iv. Pre-eclampsia;
    v. Presence of vaginal hemorrhage
    vi. Premature labour;
    vii. Primip;
b. Distance to the closest appropriate receiving facility

When the placenta is delivered, inspect it for wholeness, place in a plastic bag from the OBS kit, label it with the maternal patient's name and time of delivery, and transport it with the maternal or neonatal patient. Delivery of the placenta should not delay transport considerations/initiation.

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CBRNE & Special Directives

CHEMICAL EXPOSURE & SPECIAL EVENT (AUX.)

Headache Medical Directive – AUXILIARY - SPECIAL EVENT

An Advanced Care Paramedic may provide the treatment prescribed in this auxiliary Medical Directive if authorized.

Indications

Uncomplicated headache conforming to the patient's usual pattern;

AND

Special event: a preplanned gathering with potentially large numbers of people and the Special Event Medical Directives have been preauthorized for use by the Medical Director.

Conditions

	Acetaminophen
Age	≥18 years
LOA	Unaltered
HR	N/A
RR	N/A
SBP	N/A
Other	N/A

Contraindications

Acetaminophen
Acetaminophen use within previous 4 hours
Allergy or sensitivity to acetaminophen
Signs or symptoms of intoxication

Treatment

Consider acetaminophen

	Route
	PO
Dose	325-650 mg
Max. single dose	650 mg
Dosing interval	N/A
Max. # of doses	1

Consider release from care

Clinical Considerations

Advise patient that if the problem persists or worsens that they should seek further medical attention.

Minor Abrasions Medical Directive – AUXILIARY- SPECIAL EVENT

An Advanced Care Paramedic may provide the treatment prescribed in this auxiliary Medical Directive if authorized.

Indications

Minor abrasions;

AND

Special event: a preplanned gathering with potentially large numbers of people and the Special Event Medical Directives have been preauthorized for use by the Medical Director.

Conditions

	Topical Antibiotic
Age	N/A
LOA	Unaltered
HR	N/A
RR	N/A
SBP	N/A
Other	N/A

Contraindications

Topical Antibiotic
Allergy or sensitivity to any of the components of the topical antibiotic

Treatment

Consider topical antibiotic

Consider release from care

Clinical Considerations

Advise patient that if the problem persists or worsens that they should seek further medical attention.

Minor Allergic Reaction Medical Directive – AUXILIARY - SPECIAL EVENT

An Advanced Care Paramedic may provide the treatment prescribed in this auxiliary Medical Directive if authorized.

Indications

Signs consistent with minor allergic reaction;

AND

Special event: a preplanned gathering with potentially large numbers of people and the Special Event Medical Directives have been preauthorized for use by the Medical Director.

Conditions

	Diphenhydramine
Age	≥18 years
LOA	Unaltered
HR	WNL
RR	WNL
SBP	Normotension
Other	N/A

Contraindications

Diphenhydramine
Allergy or sensitivity to diphenhydramine
Antihistamine or sedative use in previous 4 hours
Signs or symptoms of moderate to severe allergic reaction
Signs or symptoms of intoxication
Wheezing

Treatment

Consider diphenhydramine

	Route
	PO
Dose	50 mg
Max. single dose	50 mg
Dosing interval	N/A
Max. # of doses	1

Consider release from care

Clinical Considerations

Advise patient that if the problem persists or worsens that they should seek further medical attention.

Musculoskeletal Pain Medical Directive – AUXILIARY - SPECIAL EVENT

An Advanced Care Paramedic may provide the treatment prescribed in this auxiliary Medical Directive if authorized.

Indications

Minor musculoskeletal pain;

AND

Special event: a preplanned gathering with potentially large numbers of people and the Special Event Medical Directives have been preauthorized for use by the Medical Director.

Conditions

	Acetaminophen
Age	≥18 years
LOA	Unaltered
HR	N/A
RR	N/A
SBP	N/A
Other	N/A

Contraindications

Acetaminophen
Acetaminophen use within previous 4 hours
Allergy or sensitivity to acetaminophen
Signs or symptoms of intoxication

Treatment

Consider acetaminophen

	Route
	PO
Dose	325-650 mg
Max. single dose	650 mg
Dosing interval	N/A
Max. # of doses	1

Consider release from care

Clinical Considerations

Advise patient that if the problem persists or worsens that they should seek further medical attention.

Adult Nerve Agent Exposure Medical Directive

A Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

Indications

Exposure to a known or suspected nerve agent;

AND

Signs and symptoms of a cholinergic crisis.

Conditions

Atropine	
Age	≥18 years
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Suspected cholinergic crisis **Moderate Exposure** Any one of the following: vomiting, diarrhea, bronchospasm or bronchial secretions, shortness of breath or any known liquid exposure **Severe Exposure** Signs and symptoms of a moderate exposure and any one of the following: decreased LOA, paralysis, seizure or apnea

Pralidoxime	
Age	≥18 years
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Suspected cholinergic crisis **Moderate Exposure** Any one of the following: vomiting, diarrhea, bronchospasm or bronchial secretions, shortness of breath or any known liquid exposure **Severe Exposure** Signs and symptoms of a moderate exposure and any one of the following: decreased LOA, paralysis, seizure or apnea

Obidoxime	
Age	≥18 years
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Suspected cholinergic crisis **Moderate Exposure** Any one of the following: vomiting, diarrhea, bronchospasm or bronchial secretions, shortness of breath or any known liquid exposure **Severe Exposure** Signs and symptoms of a moderate exposure and any one of the following: decreased LOA, paralysis, seizure or apnea

Diazepam	
Age	≥18 years
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Suspected cholinergic crisis **Moderate Exposure** Any one of the following: vomiting, diarrhea, bronchospasm or bronchial secretions, shortness of breath or any known liquid exposure **Severe Exposure** Signs and symptoms of a moderate exposure and any one of the following: decreased LOA, paralysis, seizure or apnea

Contraindications

Atropine
Allergy or sensitivity to atropine

Pralidoxime
Allergy or sensitivity to pralidoxime

Obidoxime
Allergy or sensitivity to obidoxime

Diazepam
Allergy or sensitivity to diazepam

Treatment

Consider Atropine

	Moderate Exposure	Severe Exposure	Moderate Exposure	Severe Exposure	Moderate Exposure	Severe Exposure
	Route	**Route**	**Route**	**Route**	**Route**	**Route**
	IM	IM	Auto-injector	Auto-injector	IV (ACP only)	IV (ACP only)
Initial Dose	2 mg	6 mg	2.1 mg	6.3 mg	2 mg	6 mg
Subsequent doses	2 mg	2 mg	2.1 mg	2.2 mg	2 mg	2 mg
Dosing interval	5 min.	5 min.	5 min.	5 min.	5 min.	5 min.
Max # of doses	N/A	N/A	N/A	N/A	N/A	N/A

Consider Pralidoxime

	Moderate Exposure	Severe Exposure	Moderate Exposure	Severe Exposure
	Route	**Route**	**Route**	**Route**
	IM	IM	Autoinjector	Autoinjector
Dose	600 mg	1,800 mg	600 mg	1,800 mg
Max. single dose	600 mg	1,800 mg	600 mg	1,800 mg
Dosing interval	N/A	N/A	N/A	N/A
Max # of doses	1	1	1	1

Consider Obidoxime (if not using pralidoxime)				
	Moderate Exposure	**Severe Exposure**	**Moderate Exposure**	**Severe Exposure**
	Route	**Route**	**Route**	**Route**
	IM	IM	Autoinjector	Autoinjector
Dose	150 mg	450 mg	150 mg	450 mg
Max. single dose	150 mg	450 mg	150 mg	450 mg
Dosing interval	N/A	N/A	N/A	N/A
Max # of doses	1	1	1	1

Consider Diazepam		
	Moderate Exposure	**Severe Exposure**
	Route	**Route**
	IM	Autoinjector
Dose	10 mg	10 mg
Max. single dose	10 mg	10 mg
Dosing interval	N/A	N/A
Max # of doses	1	1

Clinical Considerations

Only one of pralidoxime or obidoxime should be administered.

Administration of IV medications applies to ACPs only.

Do not delay IM administration if IV access is not already established.

Atropine should be administered prior to airway interventions if secretions are copious.

Subsequent doses of atropine are intended for patients showing signs of bronchial secretions and may be repeated as indicated until airway secretions are controlled.

Decontamination procedures must be integrated with antidote administration.

Cyanide Exposure Medical Directive

A Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

Indications

Suspected exposure to cyanide with signs and symptoms of poisoning.

Conditions

Sodium Thiosulfate 25%	
Age	N/A
LOA	Altered
HR	N/A
RR	N/A
SBP	N/A
Other	N/A

Hydroxocobalamin	
Age	N/A
LOA	Altered
HR	N/A
RR	N/A
SBP	N/A
Other	N/A

Contraindications

Sodium Thiosulfate 25%
Allergy or sensitivity to Sodium Thiosulfate 25%

Hydroxocobalamin
Allergy or sensitivity to Hydroxocobalamin

Treatment

Consider sodium thiosulfate 25%

	Age	Age
	<18 years	≥18 years
	Route	**Route**
	IV infusion	IV infusion
Dose	1.65 ml/kg	12.5g (50 ml of 25% solution)
Max. single dose	12.5g (50 ml of 25% solution)	12.5g (50 ml of 25% solution)
Dosing interval	N/A	N/A
Max. # of doses	1	1

Consider hydroxocobalamin (if not using sodium thiosulfate 25%)

	Age	Age
	<18 years	≥18 years
	Route	**Route**
	IV infusion	IV infusion
Dose	70 mg/kg over 30 min.	5 g over 15 - 30 min.
Max. single dose	5 g	5 g
Dosing interval	N/A	N/A
Max. # of doses	1	1

Clinical Considerations

Hydroxocobalamin must be reconstituted with 200 ml normal saline prior to use.

Hydroxocobalamin Dosing Chart

	Dose	Concentration	Volume of Administration
5	70 mg/kg	25 mg/ml	14 ml
10	70 mg/kg	25 mg/ml	28 ml
15	70 mg/kg	25 mg/ml	42 ml
20	70 mg/kg	25 mg/ml	56 ml
25	70 mg/kg	25 mg/ml	70 ml
30	70 mg/kg	25 mg/ml	84 ml
35	70 mg/kg	25 mg/ml	98 ml
40	70 mg/kg	25 mg/ml	112 ml
>40 kg	5 g	25 mg/ml	200 ml

Hydrofluoric (HF) Acid Exposure Medical Directive

A Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

Indications

Exposure to vapour and/or liquid hydrofluoric acid (HF);

AND

Exhibits signs and symptoms of HF poisoning.

Conditions

Calcium Gluconate	
Age	N/A
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	N/A

Topical Anaesthetic Eye Drops	
Age	N/A
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	N/A

Contraindications

Calcium Gluconate
Allergy or sensitivity to Calcium Gluconate

Topical Anaesthetic Eye Drops
Allergy or sensitivity to local anaesthetics

Treatment

Consider calcium gluconate		
	Inhalation exposure	**Skin exposure**
	Concentration	**Concentration**
	10% solution	2.5% gel
	Route	**Route**
	NEB	TOP
Dose	100 mg	N/A
Max Single Dose	100 mg	N/A
Dosing Interval	N/A	Immediate
Max # of doses	1	N/A

Consider topical anaesthetic eye drops	
	Eye exposure
	Route
	TOP
Dose	2 gtts/eye
Max Single Dose	2 gtts/eye
Dosing Interval	10 min
Max # of doses	N/A

Clinical Considerations

For skin contact, ensure thorough irrigation prior to treatment.

For eye exposure remove patient`s contact lenses, if applicable, prior to initiating treatment. Use anaesthetic eye drops for comfort and then irrigate eyes with normal saline for at least 15 minutes.

Pediatric Nerve Agent Exposure Medical Directive

A Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

Indications

Exposure to a known or suspected nerve agent.

Conditions

Atropine	
Age	<18 years
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Suspected cholinergic crisis Any one of the following: vomiting, diarrhea, bronchospasm or bronchial secretions, shortness of breath, decreased LOC, paralysis, seizure, apnea or any known liquid exposure

Diazepam	
Age	<18 years
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Suspected cholinergic crisis Any one of the following: vomiting, diarrhea, bronchospasm or bronchial secretions, shortness of breath, decreased LOC, paralysis, seizure, apnea or any known liquid exposure

Pralidoxime	
Age	<18 years
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Suspected cholinergic crisis Any one of the following; vomiting, diarrhea, bronchospasm or bronchial secretions, shortness of breath, decreased LOC, paralysis, seizure, apnea or any known liquid exposure

Obidoxime	
Age	<18 years
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Suspected cholinergic crisis Any one of the following; vomiting, diarrhea, bronchospasm or bronchial secretions, shortness of breath, decreased LOC, paralysis, seizure, apnea or any known liquid exposure

Contraindications

Atropine
Allergy or sensitivity to atropine

Diazepam
Allergy or sensitivity to diazepam

Pralidoxime
Allergy or sensitivity to pralidoxime

Obidoxime
Allergy or sensitivity to obidoxime

Treatment

Consider Atropine

	Weight	Weight	Weight	Weight
	<10 kg	<10 kg	≥10 kg to <40 kg	≥10 kg to <40 kg
	Route	**Route**	**Route**	**Route**
	IV (ACP only)	IM	IV (ACP only)	IM
Dose	0.5 mg	0.5 mg	1 mg	1 mg
Max. single dose	0.5 mg	0.5 mg	1 mg	1 mg
Dosing interval	5 min.	5 min.	5 min.	5 min.
Max. # of doses	N/A	N/A	N/A	N/A

Consider Diazepam

	Weight	Weight	Weight	Weight
	<10 kg	<10 kg	≥10 kg to <40 kg	≥10 kg to <40 kg
	Route	**Route**	**Route**	**Route**
	IV (ACP only)	IM	IV (ACP only)	IM
Dose	2 mg	2 mg	0.2 mg/kg	0.2 mg/kg
Max. single dose	2 mg	2 mg	8 mg	8 mg
Dosing interval	N/A	N/A	N/A	N/A
Max. # of doses	1	1	1	1

Consider Pralidoxime

	Weight	Weight	Weight	Weight
	<10 kg	<10 kg	≥10 kg to <40 kg	≥10 kg to <40 kg
	Route	**Route**	**Route**	**Route**
	IV (ACP only)	IM	IV (ACP only)	IM
Dose	15 mg/kg	15 mg/kg	15 mg/kg	15 mg/kg
Max. single dose	150 mg	150 mg	600 mg	600 mg
Dosing interval	60 min.	60 min.	60 min.	60 min.
Max. # of doses	2	2	2	2

Consider Obidoxime (if not using pralidoxime)

	Weight	Weight	Weight	Weight
	<10 kg	<10 kg	≥10 kg to <40 kg	≥10 kg to <40 kg
	Route	**Route**	**Route**	**Route**
	IV (ACP only)	IM	IV (ACP only)	IM
Dose	8 mg/kg	8 mg/kg	8 mg/kg	8 mg/kg
Max. single dose	80 mg	80 mg	320 mg	320 mg
Dosing interval	N/A	N/A	N/A	N/A
Max. # of doses	1	1	1	1

Clinical Considerations

Only one of pralidoxime or obidoxime should be administered.

Administration of IV medications applies to ACPs only

Do not delay IM administration if IV access is not already established.

Atropine should be administered prior to airway interventions if secretions are copious.

Subsequent doses of atropine are intended for patients showing signs of bronchial secretions and may be repeated as indicated until airway secretions are controlled.

Decontamination procedures must be integrated with antidote administration.

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Symptomatic Riot Agent Exposure Medical Directive

A Paramedic may provide the treatment prescribed in this Medical Directive if authorized.

Indications

Known or suspected exposure to a riot agent with signs and symptoms of a riot agent exposure.

Conditions

Topical Anaesthetic Eye Drops	
Age	N/A
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	N/A

Contraindications

Topical Anaesthetic Eye Drops
Allergy or sensitivity to local anaesthetics

Treatment

Consider topical anaesthetic eye drops	
	Route
	TOP
Dose	2 gtts/eye
Max. single dose	2 gtts/eye
Dosing interval	10 min
Max. # of doses	N/A

Clinical Considerations

For skin or mucous membrane contact, ensure thorough irrigation.

For eye exposure, remove patient`s contact lenses if applicable prior to initiating treatment. Use anaesthetic eye drops for comfort and then irrigate eyes with normal saline for at least 15 minutes.

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Certification Standard

ALSPCS

Preamble

All Paramedics shall obtain and maintain the qualifications required by the *Ambulance Act.* This document sets out the requirements and processes related to Certification.

Definitions

Terms defined in the *Ambulance Act* and Ontario Regulation 257/00 shall have the same meaning in this Certification Standard and the following terms have the following meanings:

"Authorization"
means written approval to perform Controlled Acts and other advanced medical procedures requiring medical oversight of a Medical Director;

"Business Day"
means any working day, Monday to Friday inclusive, excluding statutory and other holidays, namely: New Year's Day; Family Day; Good Friday; Easter Monday; Victoria Day; Canada Day; Civic Holiday; Labour Day; Thanksgiving Day; Remembrance Day; Christmas Day; Boxing Day and any other day on which the Province has elected to be closed for business;

"Certification"
means the process by which Paramedics receive Authorization from a Medical Director to perform Controlled Acts and other advanced medical procedures in accordance with the ALS PCS;

"Continuing Medical Education (CME)"
means a medical education program and confirmation of its successful completion as approved by the Regional Base Hospital Program (RBHP);

"Consolidation"
means the process by which a condition is placed on a Paramedic's Certification restricting their practice to working with another Paramedic with the same or higher level of qualification (*i.e.* Certification);

"Controlled Act"
means a Controlled Act as set out in subsection 27(2) of the *Regulated Health Professions Act, 1991*;

"Critical Omission or Commission"

means the performance of a Controlled Act or other advanced medical procedure listed in the ALS PCS that a Paramedic is not authorized to perform; or an action or lack of action, including the performance of a Controlled Act or other advanced medical procedure listed in the ALS PCS, by the Paramedic that has negatively affected or has the potential to negatively affect patient morbidity or mortality, with a potentially life, limb or function threatening outcome;

"Deactivation"

means the temporary revocation, by the Medical Director, of a Paramedic's Certification;

"Decertification"

means the revocation, by the Medical Director, of a Paramedic's Certification;

"Director"

means a person who holds that position within the Emergency Health Regulatory and Accountability Branch (EHRAB) of the Ministry of Health and Long-Term Care (MOHLTC);

"Employer"

means an ambulance service operator certified to provide ambulance services as defined in the *Ambulance Act*;

"Major Omission or Commission"

means an action or lack of action, including the performance of a Controlled Act or other advanced medical procedure listed in the ALS PCS, by the Paramedic that has negatively affected or has the potential to negatively affect patient morbidity without a potentially life, limb or function threatening outcome;

"Medical Director"

means a physician designated by a RBH as the Medical Director of the RBHP;

"Minor Omission or Commission"

means an action or lack of action, including the performance of a Controlled Act or other advanced medical procedure listed in the ALS PCS, by the Paramedic that may have negatively affected patient care in a way that would delay care to the patient or lengthen the patient's recovery period, but has not negatively affected patient morbidity;

"Ontario Base Hospital Group (OBHG) Executive"

means a provincial body comprised of representatives from RBHPs as defined in the Terms of Reference for OBHG Executive and approved by the MOHLTC;

"Paramedic"

means a paramedic as defined in subsection 1(1) of the *Ambulance Act*, and for purposes of this Standard a reference to the term includes a person who is seeking Certification as a Paramedic, where applicable;

"Paramedic Practice Review Committee (PPRC)"

is a committee that performs an independent, external advisory role, providing information and expert opinion to the Medical Director on issues related to Paramedic practice when the Medical Director is considering Decertification of a Paramedic;

"Patient Care Concern"

means a Critical Omission or Commission, Major Omission or Commission, or Minor Omission or Commission;

"Reactivation"

means the reinstatement of a Paramedic's Certification after a period of Deactivation;

"Regional Base Hospital (RBH)"

means a base hospital as defined in subsection 1(1) of the *Ambulance Act,* and provides an RBHP pursuant to an agreement entered into with the MOHLTC;

"Regional Base Hospital Program (RBHP)"

means a base hospital program as defined in subsection 1(1) of the *Ambulance Act;*

"Remediation"

means a customized plan by the RBHP to address a Patient Care Concern or to address any concerns identified during Certification, including a failure to meet a requirement for the maintenance of Certification;

"Senior Field Manager"

means a person who holds that position within the EHSB of the MOHLTC, and for the purposes of this Standard a reference to the term means the relevant Senior Field Manager responsible for the applicable RBHP.

Processes

Certification

A Medical Director may certify a Paramedic to perform Controlled Acts and other advanced medical procedures listed in the ALS PCS. A Medical Director may stipulate other requirements relating to Paramedic Certification. The Medical Director shall communicate such requirements to the Paramedic and the Employer in writing. The Medical Director shall notify the Paramedic and Employer within three (3) Business Days of the decision with respect to Certification as to whether the Paramedic was successful or not in attaining his or her Certification.

Consolidation

The Medical Director shall require Consolidation on all new Certifications[1]. A Medical Director may require Consolidation with respect to a Paramedic's Certification where the Paramedic is returning to practice, a Patient Care Concern has been identified in respect of the Paramedic, or as identified in the Paramedic's customized plan for Remediation. Consolidation provides for the opportunity to acquire more skills and confidence while ensuring that a support mechanism is in place for the Paramedic. The Medical Director shall determine the requirements for the Consolidation, which include the presence of another Paramedic, the level of qualification of that other Paramedic, and the restrictions of the Paramedic's practice in relation to the presence of that other Paramedic. The Medical Director, in consultation with the Employer, shall determine the duration for the Consolidation. However, the duration for Consolidation on all new Certifications shall be a minimum of 36 hours for a PCP and a minimum of 168 hours for an ACP or CCP. The Medical Director shall provide notice of Consolidation and the requirements thereof in writing to the Paramedic and Employer within two (2) Business Days. Any changes to the Consolidation by the Medical Director shall be communicated to the Paramedic and Employer immediately and any changes to the requirements thereof shall be provided in writing as soon as possible.

Responding to a Patient Care Concern

The RBHP shall assess all matters regarding patient care to determine whether or not there is a Patient Care Concern and the Employer shall assist where required. Where a matter regarding patient care is identified by the Employer that may be a Patient Care Concern, the Employer shall notify the RBHP as soon as possible.

Where the Patient Care Concern is a Minor Omission or Commission the RBHP shall notify the Paramedic and Employer by aggregate reports provided semi-annually. Where the Patient Care Concern is a Major Omission or Commission, a Critical Omission or Commission, or a repetition of Minor Omissions or Commissions the RBHP shall immediately notify the Paramedic and Employer of the Patient Care Concern and provide notice in writing as soon as possible. The notice in writing

[1] See New Certification process

shall indicate that the Patient Care Concern is being considered to determine whether the Paramedic will be subject to Remediation, Deactivation or Decertification.

Remediation

A Medical Director may require the Paramedic to receive Remediation. The customized plan in the Remediation shall identify the concern, the remedial action to be followed, and the objectives to be achieved. The plan shall include a specific timeframe in which the Paramedic must successfully complete the Remediation. The RBHP shall develop the plan, in consultation with the Employer as necessary, as soon as possible. Once developed, the RBHP shall provide the written plan to the Paramedic and Employer. Any changes to the plan by the RBHP shall be communicated to the Paramedic and Employer immediately and the updated written plan shall be provided as soon as possible. The Medical Director shall notify the Paramedic and Employer in writing within three (3) Business Days of the successful completion of the Remediation.

Deactivation

A Medical Director may deactivate a Paramedic's Certification for which the Paramedic has received Authorization.

Deactivation may occur as a result of:

1. a Patient Care Concern;
2. failure to respond to the RBHP's requests for feedback or interviews regarding a Critical Omission or Commission, Major Omission or Commission or Minor Omission or Commission within a reasonable period of time as specified by the RBHP;
3. failure to successfully complete Remediation;
4. misconduct related to Certification (*e.g.* falsification of documentation, failure to disclose previous Deactivations and Decertifications, including practice in other jurisdictions);
5. repeated Deactivations in similar clinical areas; or
6. failure to meet the requirements for maintenance of Certification.

The Medical Director shall immediately notify the Paramedic, Employer, the Senior Field Manager and all other RBHPs of a Deactivation. The Medical Director shall provide a brief written reason for the Deactivation to the Paramedic, Employer, the Senior Field Manager and all other RHBPs as soon as possible.

Following a Deactivation, the Medical Director shall determine whether the requirements for Remediation or the requirements for maintenance of Certification have been met, as the case may be, at which time the Medical Director shall either proceed with Reactivation or Decertification. The Remediation and Reactivation process shall be completed as soon as possible; however it shall not exceed ninety (90) consecutive days in length. Where the Medical Director has proceeded with Reactivation, the Medical Director shall immediately notify the Paramedic, Employer, the Senior Field Manager, and all other RBHPs of the Reactivation.

Decertification

A Medical Director shall revoke a Paramedic's Certification where that person is no longer employed or retained as a volunteer by an Employer and that person shall be deemed to have undergone Decertification and the PPRC process does not apply. In all other circumstances, a Medical Director shall not proceed with a Decertification unless: (i) a PPRC has been convened and has provided its written recommendations to the Medical Director and the Paramedic; or (ii) the Paramedic has waived the PPRC process in writing.

The Medical Director shall immediately notify the Paramedic, Employer, the Senior Field Manager and all other RBHPs of their decision to either proceed with Reactivation or Decertification of the Paramedic. Where the Medical Director proceeds with Decertification, they shall provide a written explanation to the Paramedic, outlining the reasons for Decertification. The Medical Director shall provide a brief written explanation confirming the reason for the Decertification to the Employer, the Senior Field Manager and all other RHBPs as soon as possible.

New Certification

The following requirements apply with respect to Paramedics who are seeking Certification from an RBHP and who are not currently certified at that level by another RBHP, including Paramedics who have been previously certified in Ontario.

1. The Paramedic shall be employed or retained by an Employer.
2. The Paramedic shall complete a form provided by the RBHP that includes the following:
   a. a list of all RBHPs or other certifying bodies under which the Paramedic has previously received Certification within the ten (10) year period immediately preceding the application;
   b. a declaration of the dates of all previous Deactivations and/or Decertifications that have previously occurred at all other RBHPs or other certifying bodies[2] within the ten (10) year period immediately preceding the application; and
   c. written permission for the prospective RBHP to obtain information in writing from other employers, other physicians, other programs, *etc.* regarding the Paramedic's previous practice.
3. The Paramedic shall successfully complete an evaluation by the RBHP and any orientation and training required by the RBHP. The evaluation may include:
   a. an assessment of knowledge and skills;
   b. scenario evaluation; and
   c. oral interview or clinical evaluation with the Medical Director or designate.

Upon meeting the above requirements, for new Certification, the Medical Director shall certify the Paramedic and require a condition of Consolidation on the Paramedic's Certification.

[2] Or a declaration of dates when certification was denied, revoked, suspended or under review as other certifying bodies may not use the terms Deactivation and Decertification

Cross Certification

The following requirements apply with respect to Paramedics who are already certified and who are seeking Certification by a Medical Director in another RBHP.

1. The Paramedic shall be employed or retained by an Employer within the specified catchment area.
2. The Paramedic shall complete a form provided by the RBHP that includes the following:
   a. a list of all RBHPs under which the Paramedic has received Certification within the ten (10) year period immediately preceding the application;
   b. a declaration of the dates of all previous Deactivations and/or Decertifications that have occurred within the ten (10) year period immediately preceding the application;
   c. status of all current Certifications from all RBHPs; and
   d. written permission for the prospective RBHP to obtain information in writing from other physicians, other programs, *etc.* regarding the Paramedic's previous practice.
3. The Paramedic shall successfully complete an evaluation by the RBHP and any orientation and training required by the RBHP. The evaluation may include:
   a. an assessment of knowledge and skills;
   b. scenario evaluation; and
   c. oral interview or clinical evaluation with the Medical Director or designate.

Upon meeting the above requirements for Cross Certification, the Medical Director shall certify the Paramedic.

Maintenance of Certification

The following requirements apply with respect to Paramedics regarding the maintenance of Certification.

1. The Paramedic shall demonstrate competency in the performance of Controlled Acts and other advanced medical procedures, compliance with the ALS PCS, and the provision of patient care at the Paramedic's level of Certification. Competency and compliance shall be determined by the Medical Director and may include chart audits, field evaluations, and RBHP patch communication review.
2. The Paramedic shall not have an absence from providing patient care that exceeds ninety (90) consecutive days.
3. The Paramedic shall either,
   a. provide patient care to a minimum of ten (10) patients per year whose care requires assessment and management at the Paramedic's level of Certification, or
   b. where a Paramedic is unable to assess and manage the minimum of ten (10) patients per year, demonstrate alternate experience, as approved by the Medical Director, that may involve 1 or more of the following:
      i. other patient care activities;
      ii. additional CME;

iii. simulated patient encounters; and
iv. clinical placements.

4. The Paramedic shall complete at least 1 evaluation per year at the appropriate level of Certification, which may include: an assessment of knowledge and evaluation of skills; scenarios; and on-line learning and evaluation.
5. The Paramedic shall complete a minimum of CME hours per year as follows: eight (8) hours for PCPs, twelve (12) hours for PCP Flight, twenty-four (24) hours for ACPs[3], and seventy-two (72) hours for ACP Flight and CCP. CME hours include hours completed as part of an evaluation required by paragraph 4.

Upon meeting the above requirements for maintenance of Certification, the Medical Director shall certify the Paramedic.

Paramedic Practice Review Committee (PPRC)

The PPRC is convened by another RBHP through the OBHG Executive Chair to perform an independent, external advisory role, providing information and expert opinion to the affected Medical Director on issues related to Paramedic practice when a Medical Director is considering Decertification of a Paramedic following Deactivation. When the RBHP is engaged for the purposes of a PPRC process the RBHP is termed the "host RBHP". The parties to the PPRC process are the affected Medical Director and the Paramedic who is subject of the consideration of Decertification.

Membership

The members of the PPRC shall be:

- the host RBHP Manager/Director, who will act as Chair;
- host Medical Director; and
- two (2) Peer Paramedics.

Selection of Peer Paramedics: One (1) peer Paramedic shall be selected by the host RBHP and one (1) peer Paramedic by the affected Paramedic from a pre-identified group of eligible Paramedics. All members of this group shall:

- hold Certification from the host RBHP for the preceding twelve (12) months at the same level or higher as the Paramedic who is subject of the consideration of Decertification; and
- not have any operational relationship or personal relationship with the affected RBHP, Medical Director, or the Paramedic;

[3] With respect to an ACP whose Certification has been for a period of less than a year and who has completed a minimum of eight (8) hours of CME, the Medical Director shall proportionally adjust the remaining required CME hours.

Confidentiality: All members of the PPRC shall keep confidential all information obtained during the PPRC process.

Recommendations

The PPRC shall provide written recommendations to the Medical Director who is considering Decertification of a Paramedic. The recommendation of the PPRC shall be made by consensus. The recommendation rendered by the PPRC is not subject to appeal or other challenge, and is not binding on the affected Medical Director. The affected Medical Director is responsible for making the final decision with respect to the Decertification of the affected Paramedic.

PPRC Process

1. The affected Medical Director shall notify the OBHG Executive Chair that a PPRC is required regarding a consideration to proceed with the Decertification of a Paramedic.
2. If the OBHG Executive Chair is employed by the affected RBHP, they shall send the request to the OBHG Executive Vice Chair. (All subsequent references to the "OBHG Executive Chair" shall be references to the OBHG Executive Vice Chair, as applicable.)
3. The OBHG Executive Chair shall ensure that the PPRC adheres to all established times lines in the process by communicating directly with the PPRC Chair.
4. The OBHG Executive Chair shall select an appropriate host RBHP.
5. The OBHG Executive Chair shall provide notice to the affected Medical Director and Paramedic, in a format set out in *Appendix A*, that a PPRC has been convened to review the case.
6. The affected Medical Director and Paramedic shall provide any written submissions to the OBHG Executive Chair within fifteen (15) Business Days of receiving notice that a PPRC has been convened.
7. Submissions shall be sent via courier requiring signature of receipt, registered mail, fax (with confirmation) or email (with confirmation).
8. The OBHG Executive Chair shall provide a copy of each party's submission to the other party within five (5) Business Days.
9. Both parties shall have the opportunity to respond to the original submissions within fifteen (15) Business Days of their receipt.
10. The OBHG Executive Chair shall provide a copy of all submissions to the affected Paramedic, Medical Director and four (4) copies to the PPRC Chair.
11. The PPRC Chair shall provide copies of the submissions to the other members of the PPRC.
12. The PPRC shall not begin its review until receipt of all submissions.
13. If clarification of an issue or information regarding applicable standards or legislation is required, the PPRC Chair shall request the clarification or information in writing from the relevant party. The response to the request shall be provided to the PPRC Chair and the other party in writing, within ten (10) Business Days of the request.
14. The PPRC Chair shall provide a copy of the response to OBHG Executive Chair.
15. The PPRC shall review the submissions and any responses within fifteen (15) Business Days from receipt of the full submission. If an extension is required the request will be made to the OBHG Executive Chair. The PPRC will render a written recommendation containing the

supporting rationale, within ten (10) Business Days of the final review meeting and submit it to the OBHG Executive Chair.

16. The OBHG Executive Chair shall send a copy of the final recommendation to both parties.

Appendix A - Paramedic Practice Review Committee Letter

<<Date>>

A Paramedic Practice Review Committee (PPRC) has been convened to review <<brief details of case/incident>>.

The PPRC is convened by another RBHP through the OBHG Executive Chair to perform an independent, external advisory role, providing information and expert opinion to the affected Medical Director on issues related to Paramedic practice when a Medical Director is considering Decertification of a Paramedic following Deactivation. When the RBHP is engaged for the purposes of a PPRC process the RBHP is termed the "host RBHP". The affected Medical Director shall not proceed with Decertification unless a PPRC has been convened and has provided its written recommendations to the affected Medical Director and the Paramedic.

Recommendations

The PPRC shall provide written recommendations, including supporting rationale, to the Medical Director regarding the consideration to decertify a Paramedic. The recommendation of the PPRC shall be made by consensus. The recommendation rendered by the PPRC is not subject to appeal or other challenge, and is not binding on the affected Medical Director. The affected Medical Director is responsible for making the final decision with respect to the Decertification of the affected Paramedic.

Membership

<<Medical Director>> <<Regional Base Hospital Program Manager/Director>>

<<Peer Paramedic>> <<Peer Paramedic>>

Process:

- The affected Medical Director shall notify the OBHG Executive Chair that a PPRC is required regarding a consideration to proceed with the Decertification of a Paramedic.
- The OBHG Executive Chair shall select an appropriate host RBHP and provide notice to both parties that a PPRC has been convened to review the case.
- Both parties shall provide any written submissions to the OBHG Executive Chair within fifteen (15) Business Days of receiving notice that a PPRC has been convened.
- The OBHG Executive Chair shall provide a copy of each party's submission to the other party within five (5) Business Days and both parties shall have the opportunity to respond to the original submissions within fifteen (15) Business Days of their receipt.
- The OBHG Executive Chair shall provide a copy of all submissions to both parties and four (4) copies to the PPRC Chair to distribute to the other members of the PPRC. The PPRC shall begin its review once all submissions are received.
- If clarification of an issue or information regarding applicable standards or legislation is required, the PPRC Chair shall request the clarification or information in writing from the relevant party. The response to the request shall be provided to the PPRC Chair and the other party in writing, within ten (10) Business Days of the request.
- The PPRC shall review the submissions and any responses within fifteen (15) Business Days from receipt of the full submission. If an extension is required the request will be made to the OBHG Executive Chair.
- The PPRC will render a written recommendation containing the supporting rationale, within ten (10) Business Days of the final review meeting and submit it to the OBHG Executive Chair.
- The OBHG Executive Chair shall send a copy of the final recommendation to both parties.

Research Trial Standard

MOH may, at its discretion, approve research trials that include patient care practices that are different from those otherwise set out in the Standards.

A paramedic properly enrolled in an approved research trial shall:

1. determine whether a patient may be treated in accordance with a research trial, only if the following conditions have been met:
    a. MOH has approved the patient care practices set out in the research trial as an alternate standard than to those set out in the Standards;
    b. The research trial has been approved by a Research Ethics Board (REB) that:
        i. abides by and is consistent with the version of the Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans current at the time of submission, and
        ii. meets the requirements for an REB set out in section 15 of O. Reg. 329/04 made under PHIPA, and

Guideline

Recall section 44 of PHIPA, which includes provisions related to personal health information and researchers.

    c. The research trial has been reviewed and supported in writing by the Ontario Base Hospital Group Medical Advisory Committee;
2. obtain the appropriate patient consent for participation in the research trial; and

Guideline

Recall paragraph 11 of the *General Measures Standard* of the *Basic Life Support Patient Care Standards*, which specifies that the paramedic shall also obtain consent for patient care as per the *Health Care Consent Act, 1996* (Ontario)

3. where authorized, provide care in accordance with the approved research trial.

References

BLSPCS & ALSPCS

Anticoagulation Cheat-sheet

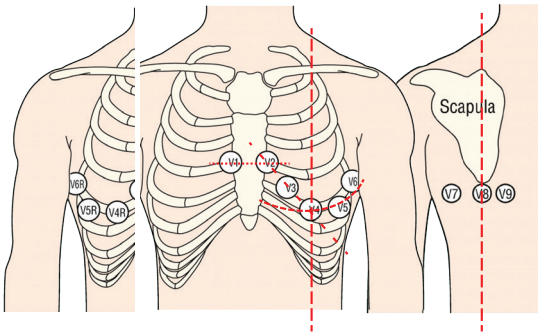
Heparins (low molecular weight)
Fragmin (dalteparin)
Lovenox (enoxaparin)

Standard anticoagulants
Warfarin (coumadin)

Novel anticoagulants
Pradaxa (dabigatran)
Eliquis (apixaban)
Xarelto (rivaroxaban)

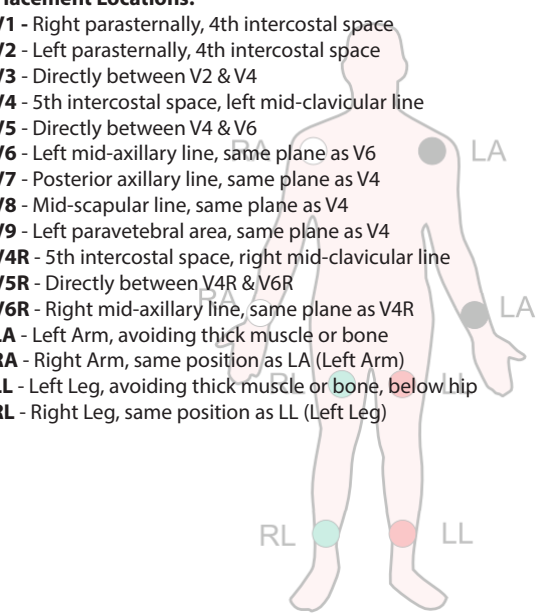
Daily Dose ASA is **NOT a contraindication** when giving an NSAID

Anticoagulation Therapy
High risk for bleeding.
Consider FTTS where appropriate.



Placement Locations:

V1 - Right parasternally, 4th intercostal space
V2 - Left parasternally, 4th intercostal space
V3 - Directly between V2 & V4
V4 - 5th intercostal space, left mid-clavicular line
V5 - Directly between V4 & V6
V6 - Left mid-axillary line, same plane as V6
V7 - Posterior axillary line, same plane as V4
V8 - Mid-scapular line, same plane as V4
V9 - Left paravetebral area, same plane as V4
V4R - 5th intercostal space, right mid-clavicular line
V5R - Directly between V4R & V6R
V6R - Right mid-axillary line, same plane as V4R
LA - Left Arm, avoiding thick muscle or bone
RA - Right Arm, same position as LA (Left Arm)
LL - Left Leg, avoiding thick muscle or bone, below hip
RL - Right Leg, same position as LL (Left Leg)



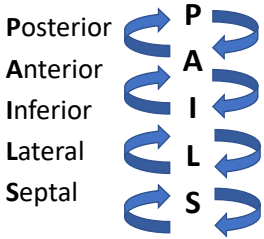
ASSOCIATED LEADS

LEAD I HIGH LATERAL	**AVR** HIGH LATERAL	**VI** SEPTAL	**V4** ANTERIOR
LEAD II INFERIOR	**AVL** HIGH LATERAL	**V2** SEPTAL	**V5** LOW LATERAL
LEAD III INFERIOR	**AVF** INFERIOR	**V3** ANTERIOR	**V6** LOW LATERAL

ECG criteria for STEMI:

- Patient is ≥ 18 years of age
- Time from onset of current episode of pain is <12 hours
- Chest pain or equivalent consistent with cardiac ischemia/myocardial infarction
- ≥ 2mm ST segment elevation in leads V1-V3 in at least two contiguous leads; **AND/OR**
- ≥ 1mm ST segment elevation in at least two other anatomically contiguous leads; **OR**
- 12-lead ECG computer interpretations of STEMI and Paramedic agrees

P-A-I-L-S for Reciprocal Changes



Some POTENTIAL causes of Axis Deviation

Extreme Right Axis Deviation

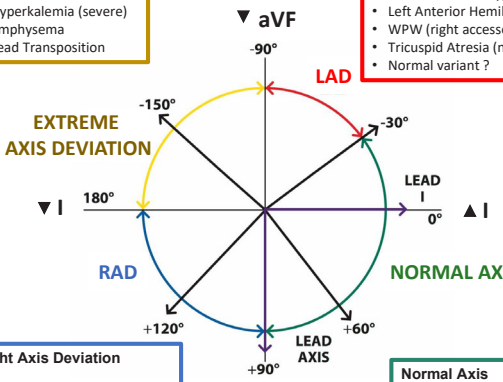
LEAD I : Negative
LEAD aVF: Negative

- V Tach
- Pacing
- Anterolateral MI
- Hyperkalemia (severe)
- Emphysema
- Lead Transposition

Left Axis Deviation

LEAD I: Positive
LEAD aVF: Negative

- LBBB
- Inferior MI
- Hyperkalemia
- Left Ventricular Hypertrophy
- Left Anterior Hemiblock
- WPW (right accessory pathway)
- Tricuspid Atresia (narrowing)
- Normal variant ?



Right Axis Deviation

LEAD I: Negative
LEAD aVF: Positive

- RBBB
- Lateral Wall MI
- Right Ventricular Overload (PE, COPD)
- Right Ventricular Hypertrophy
- WPW (left accessory pathway)
- Ventricular Ectopic Rhythms
- Normal variant (i.e. children, tall & thin adults)

Normal Axis

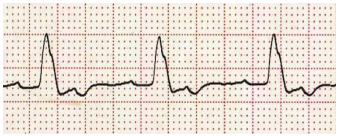
LEAD I: Positive
LEAD aVF: Positive

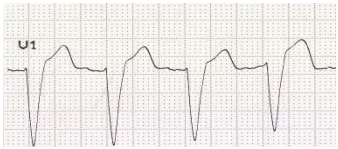
Normal Axis
Normal Variant can be up to -30° in some patients (i.e. pregnancy, obesity)

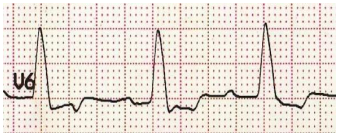
A Normal Axis does not indicate the absence of a cardiac event

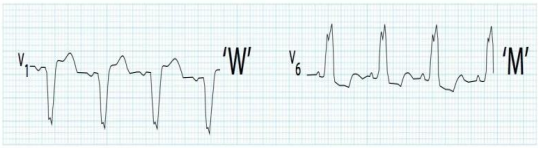
LEFT BUNDLE BRANCH BLOCK – LBBB

- Right ventricle depolarizes before the Left ventricle
- QRS is wide, >0.12 secs due to two R waves
- QRS is negative in V1
- No Q wave in I, AVL, V5, V6
- Broad monomorphic R waves in lead I and V6 with no Q waves
- Broad monomorphic S waves in lead I, may have small r wave
- Depressed ST segment with T wave inversion in V6



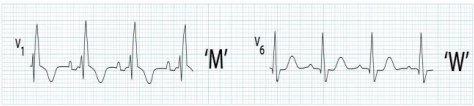


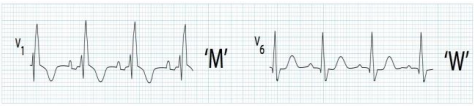


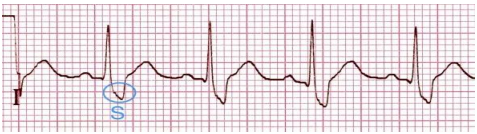


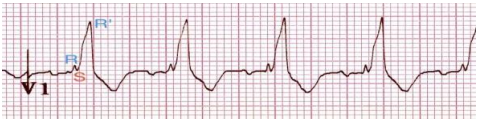
RIGHT BUNDLE BRANCH BLOCK – RBBB

- Left ventricle depolarizes before the Right ventricle
- Wide QRS >0.12 secs
- Slurred S wave in leads I and V6 (could be various morphology)
- rSR in V1 and qRS in V6



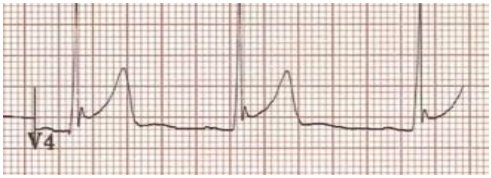


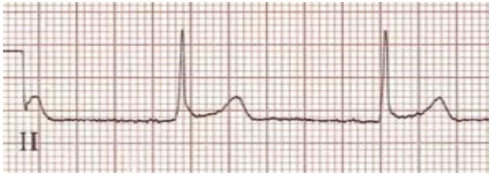




BENIGN EARLY REPOLARIZATION - BER

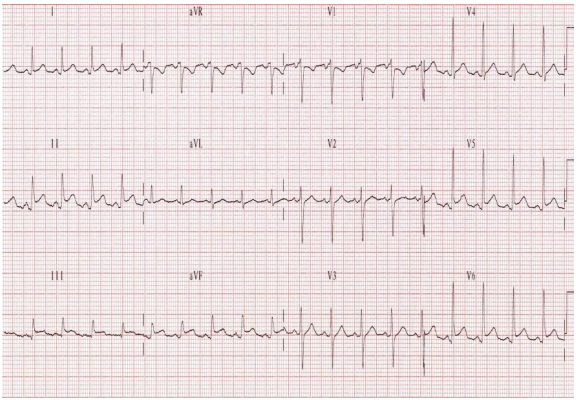
- ST elevation in many leads (usually 1-2mm in height) but it has a fish hook appearance to it (could be very small)
- Look particularly in leads V2, V3, **V4** and V5. The fish hook appearance off the QRS is most noticeable in these leads
- A normal benign variation that has no clinical significance
- It usually occurs in people less than 50 yrs old (if seen in older patient's, investigate for AMI due to the risk factors of that age population)
- Remember the happy, sad, straight face? This is the happy ST elevation
- Signs best seen in V4. It is most noticeable here because the lower V leads focus more on the ventricles than the other leads. The waveforms will look larger = able to pick out anomalies with depolarization and repolarization more easily





PERICARDITIS

- Widespread ST elevation and PR depression through the limb leads and precordial leads
- You may also have reciprocal ST depression and PR elevation in V1 and aVR
- Normal T wave amplitude
- ECG changes evolve over time
- Remember the happy, sad, straight face? This is the happy ST elevation



LEFT VENTRICULAR HYPERTROPHY - LVH

Left Ventricular Hypertrophy

- Wide QRS in lead I
- Narrow QRS in V6
- Increased **R wave** in left sided leads (I, aVL, **V5-V6**)
- Increased **S wave** in right sided leads (III, aVR, **V1-V2**)

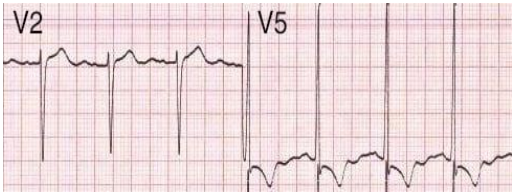
Voltage Criteria:

Precordial Leads

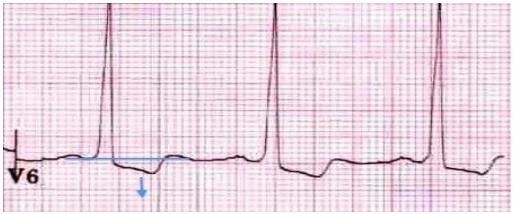
- R wave in V5 or V6 + S wave in V1 >35mm

Non-Voltage Criteria:

Left Ventricular Strain Pattern: ST segment depression and T wave inversion in the left-sided leads (leads I, AVL, V5, V6, occasionally inferior leads)



LVH by voltage criteria: S wave in V2 + R wave in V5 > 35 mm



LV strain pattern: ST depression and T wave inversion in the lateral leads

Recognizing Excited Delirium			
6 out of 10 elements present?		**MNEMONIC: Not – A - Crime**	
1.	Increased pain tolerance	**N:**	Naked
2.	Tachypnea	**O:**	Objects
3.	Sweating	**T:**	Tough
4.	Agitation	**A:**	Acute Onset
5.	Tactile hyperthermia	**C:**	Confused
6.	Police non-compliance	**R:**	Resistant
7.	Lack of tiring	**I:**	Incoherent Speech
8.	Unusual superhuman strength	**M:**	Mental Health
9.	Inappropriate clothing / nudity	**E:**	Early EMS request
10.	Mirror / glass attraction		

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Destination Guidelines

BLSPCS & ALSPCS

Field Trauma Triage Standard

Definitions

For the purposes of the *Field Trauma Triage Standard:*

Regionally Designated Equivalent Hospital

means an appropriately resourced hospital facility as defined by the Regional Trauma Network of Critical Care Services Ontario and included in a local PPS.

Transport Time

means the time from scene departure to time of arrival at destination.

General Directive

The paramedic shall follow the procedure below when conducting field triage of patients injured by a traumatic mechanism or who show evidence of trauma.

The paramedic shall also use this standard to assess the clinical criteria (*i.e.* to determine if the patient meets the clinical criteria) as required by the *Air Ambulance Utilization Standard*.

The paramedic shall consider using the Trauma Termination of Resuscitation (TOR) contained in the *Trauma Cardiac Arrest Medical Directive* as per the ALS PCS.

CACC/ACS may authorize the transport once notified of the patient's need for re-direct or transport under the *Field Trauma Triage Standard.*

Procedure

The paramedic shall:

1. assess the patient to determine if he/she has one or more of the following **physiological criteria** (Step 1):
   a. Patient does not follow commands,
   b. Systolic blood pressure <90mmHg, or
   c. Respiratory rate <10 or ≥30 breaths per minute or need for ventilatory support (<20 in infant aged <1 year);

2. if the patient meets the physiological criteria listed in paragraph 1 above, **AND** the land transport time is estimated to be <30 minutes* to a Lead Trauma Hospital (LTH) or regionally designated equivalent hospital, transport the patient directly to the LTH or regionally designated equivalent hospital;

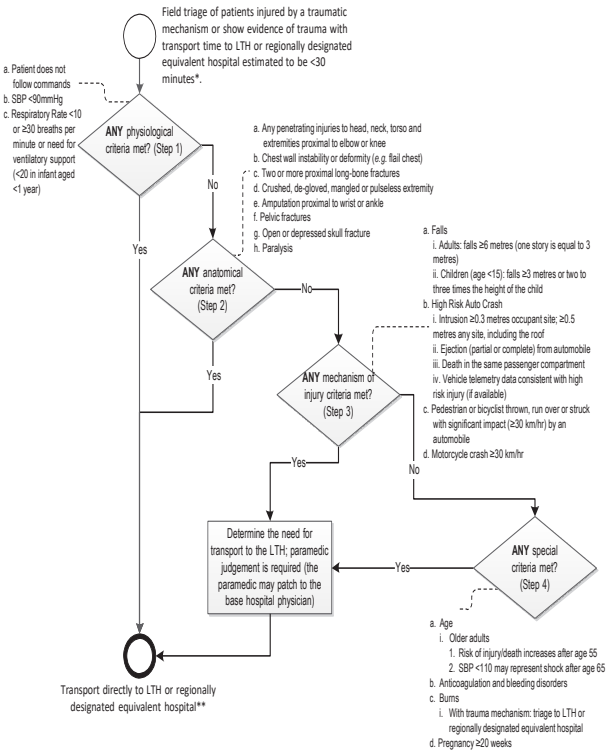
3. if the patient does not meet the criteria listed in paragraphs 1 and 2, assess the patient to determine if he/she has one or more of the following **anatomical criteria** (Step 2):
   a. Any penetrating injuries to head, neck, torso and extremities proximal to elbow or knee,
   b. Chest wall instability or deformity (*e.g.* flail chest),
   c. Two or more proximal long-bone fractures,
   d. Crushed, de-gloved, mangled or pulseless extremity,
   e. Amputation proximal to wrist or ankle,
   f. Pelvic fractures,
   g. Open or depressed skull fracture, or
   h. Paralysis;

4. if the patient meets the anatomical criteria listed in paragraph 3 above and the land transport time is estimated to be <30 minutes* to the LTH or regionally designated equivalent hospital, transport the patient directly to the LTH or regionally designated equivalent hospital;
5. if unable to secure the patient's airway or survival to the LTH or regionally designated equivalent hospital is unlikely, transport the patient to the closest emergency department despite paragraphs 2 and 4 above;
6. despite paragraph 5 above, transport the patient directly to the LTH or regionally designated equivalent hospital if the patient has a penetrating trauma to the torso or head/neck, and meets **ALL** of the following:
   a. Vital signs absent yet not subject to TOR described in the *General Directive* above, and
   b. Land transport to the LTH or regionally designated equivalent hospital is estimated to be <30 minutes*;
7. if the patient does not meet the physiological or anatomical criteria listed above, use the following **criteria** to determine if the patient may require other support services at the LTH or regionally designated equivalent hospital as a result of his/her traumatic **mechanism of injury** (Step 3):
   a. Falls
      i. Adults: falls ≥6 metres (one story is equal to 3 metres)
      ii. Children (age <15): falls ≥3 metres or two to three times the height of the child
   b. High Risk Auto Crash
      i. Intrusion ≥0.3 metres occupant site; ≥0.5 metres any site, including the roof
      ii. Ejection (partial or complete) from automobile
      iii. Death in the same passenger compartment
      iv. Vehicle telemetry data consistent with high risk injury (if available)
   c. Pedestrian or bicyclist thrown, run over or struck with significant impact (≥30 km/hr) by an automobile
   d. Motorcycle crash ≥30 km/hr;
8. if the patient meets the mechanism of injury criteria listed in paragraph 7 above, **AND** the land transport time is estimated to be <30 minutes * to a LTH or regionally designated equivalent hospital, determine the need for patient transport to the LTH or regionally designated equivalent hospital;
9. in conjunction with the physiological, anatomical, and mechanism of injury criteria listed above, consider the following **special criteria** (Step 4):
   a. Age
      i. Risk of injury/death increases after age 55
      ii. SBP <110 may represent shock after age 65
   b. Anticoagulation and bleeding disorders
   c. Burns
      i. With trauma mechanism: triage to LTH
   d. Pregnancy ≥20 weeks; and
10. if the patient meets any of the special criteria listed above, **AND** the land transport time is estimated to be <30 minutes* to a LTH or regionally designated equivalent hospital, determine the need for patient transport to the LTH or regionally designated equivalent hospital.

***Note: The 30 minute transport time may be amended to up to 60 minutes as per an ambulance service PPS, but may not exceed 60 minutes.**

Field Trauma Triage Prompt Card

This prompt card provides a quick reference of the Field Trauma Triage Standard contained in the Basic Life Support Patient Care Standards (BLS PCS). Please refer to the BLS PCS for the full standard.

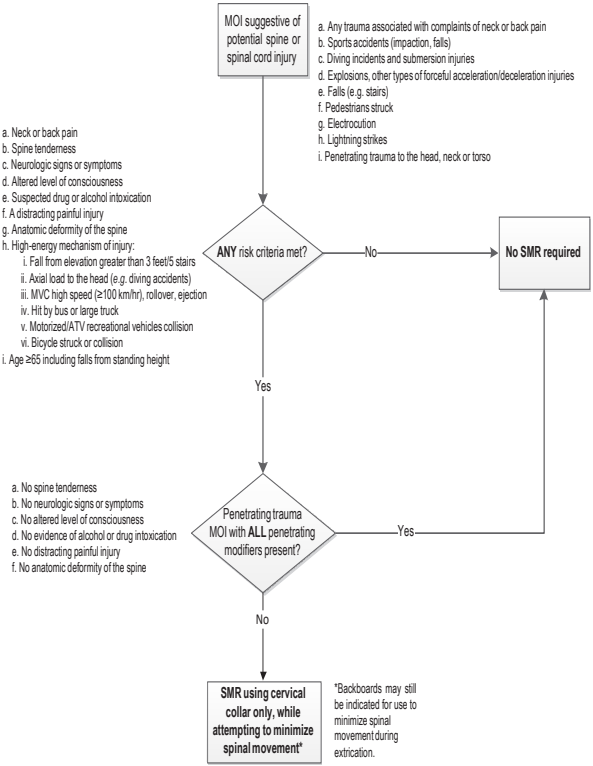


* The 30 minute transport time may be amended to up to 60 minutes as per an ambulance service PPS, but may not exceed 60 minutes.

**If unable to secure the patient's airway or survival to the LTH or regionally designated equivalent hospital is unlikely, transport the patient to the closest ED (unless patient has penetrating trauma to the torso or head/neck). Consider the Trauma TOR as per the ALS PCS.

Spinal Motion Restriction (SMR) Standard

This prompt card provides a quick reference of the Spinal Motion Restriction (SMR) Standard contained in the Basic Life Support Patient Care Standards (BLS PCS). Please refer to the BLS PCS for the full standard.



Air Ambulance Utilization Standard

General Directive

Requests for an on-scene air ambulance response should meet at least one of the bulleted operational criteria **PLUS** one of the clinical criteria (*e.g.* known clinical criteria as listed in the *Field Trauma Triage Standard* or from the bulleted list of medical or obstetrical criteria listed below).

Procedure

The paramedic shall:

1. assess the scene response to meet one or more of the following **operational criteria**:
   a. The land ambulance is estimated to require more than 30 minutes to reach the scene and the air ambulance can reach the scene quicker.
   b. The land ambulance is estimated to require more than 30 minutes to travel from the scene to the closest appropriate hospital* and the air ambulance helicopter can reach the scene and transport the patient to the closest appropriate hospital* quicker than the land ambulance.
   c. The estimated response for both land and air is estimated to be greater than 30 minutes, but approximately equal, and the patient needs care which cannot be provided by the responding land ambulance.
   d. There are multiple patients who meet the clinical criteria and the local land ambulance resources are already being fully utilized.
2. if the scene response meets the requirements of paragraph 1 above, assess the patient to determine if he/she meets one or more of the following **clinical criteria**:
   a. Patients meeting the criteria listed in the *Field Trauma Triage Standard*.
   b. Patients meeting one or more of the following:
      i. **Medical**:
         1. Shock, especially hypotension with altered mentation (*e.g.* suspected aortic aneurysm rupture, massive gastrointestinal bleed, severe sepsis, anaphylaxis, cardiogenic shock, *etc.*)
         2. Acute stroke with a clearly determined time of onset or last known to be normal <6.0 hours
         3. Altered level of consciousness (GCS <10)
         4. Acute respiratory failure or distress
         5. Suspected STEMI or potentially lethal dysrhythmia
         6. Resuscitation from respiratory or cardiac arrest
         7. Status epilepticus
         8. Unstable airway or partial airway obstruction

ii. **Obstetrical**:

1. Active labour with abnormal presentation (*i.e.* shoulder, breech or limb)
2. Multiple gestation and active labour
3. Umbilical cord prolapse
4. Significant vaginal bleeding (suspected placental abruption or placenta previa or ectopic pregnancy);

3. in conjunction with the ACO, assess if an on-scene air ambulance helicopter is appropriate, based on:
   a. the perceived severity of the reported injuries and without confirmation that the clinical criteria have been met, or
   b. the patient cannot reasonably be reached by land ambulance (*e.g.* sites without road access such as islands; geographically isolated places, *etc.*);

4. if the requirements listed in paragraph 2 or 3 above are met, request an on-scene air ambulance helicopter response:
   a. Provide the ACO with the information set out in operational and clinical criteria above. In order for the ACO to determine if an air ambulance response and transport will be quicker than land ambulance, the paramedic will provide the ACO with the estimated time to prepare the patient for transport, identify separately any time required for patient extrication, provide the estimated land ambulance driving time to the closest appropriate hospital and any additional information as required.
   b. The paramedics shall not delay patient transport by waiting for the air ambulance helicopter, unless the air ambulance helicopter can be seen on its final approach to the scene. If the air ambulance helicopter is en route but not on final approach to the scene, and the land paramedics have the patient in their ambulance, then the land ambulance will proceed to the closest local hospital with an emergency department. The air ambulance helicopter will proceed to that local hospital and, if appropriate, assist hospital personnel prepare the patient for rapid evacuation.
   c. While en route to the local hospital, paramedics may rendezvous with the air ambulance helicopter if:
      i. the air ambulance helicopter is able to land along the direct route of the land ambulance; and
      ii. it would result in a significant reduction in transport time to the most appropriate hospital.

5. if the call's circumstances and patient(s) fail to meet the criteria set out in this standard and an air ambulance helicopter is known to be responding based on the merits of the initial request for ambulance service, contact the CACC/ACS and advise that an on-scene air ambulance helicopter response is not required and why it is not required.

Guideline

Air Ambulance Helicopter Landing Site Safety and Coordination

Upon confirmation that the air ambulance helicopter is responding, the paramedic shall follow the guidelines set out by the Ornge Aviation Safety Department, which can be found on Ornge's "Aircraft Safety" website at: https://www.ornge.ca/aircraft-safety.

Other Use of Air Ambulance Helicopter

- Air ambulance helicopters are not permitted to respond to night calls which require landing at a site other than night licensed airports, helipads or night approved remote landing sites.
- Air ambulance helicopters are not permitted to conduct search and rescue calls.
- In cases where a land ambulance can reach the patient(s) and an on-scene response by air ambulance helicopter is appropriate, the ACO will assign a land ambulance and continue the land response until the flight crew requests that the land ambulance be cancelled.
- In cases where a land ambulance arrives on-scene prior to the air ambulance helicopter, paramedics shall inform the CACC/ACS as clinical events occur.

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Acute Stroke Bypass Prompt Card

Paramedic Prompt Card for Acute Stroke Bypass Protocol

This prompt card provides a quick reference of the *Acute Stroke Protocol* contained in the *Basic Life Support Patient Care Standards* (BLS PCS). Please refer to the BLS PCS for the full protocol.

Indications under the Acute Stroke Protocol

Redirect or transport to the closest or most appropriate Designated Stroke Centre* will be considered for patients who meet **ALL** of the following:

1. Present with a new onset of at least one of the following symptoms suggestive of the onset of an acute stroke:
    a. Unilateral arm/leg weakness or drift.
    b. Slurred speech or inappropriate words or mute.
    c. Unilateral facial droop.
2. Can be transported to arrive at a Designated Stroke Centre within 6 hours of a clearly determined time of symptom onset or the time the patient was last seen in a usual state of health.

*A Designated Stroke Center is a Regional Stroke Centre, District Stroke Centre or a Telestroke Centre regardless of EVT capability.

Contraindications under the Acute Stroke Protocol

ANY of the following exclude a patient from being transported under the Acute Stroke Protocol:

1. CTAS Level 1 and/or uncorrected airway, breathing or circulatory problem.
2. Symptoms of the stroke resolved prior to paramedic arrival or assessment**.
3. Blood sugar <3 mmol/L***.
4. Seizure at onset of symptoms or observed by paramedics.
5. Glasgow Coma Scale <10.
6. Terminally ill or palliative care patient.
7. Duration of out of hospital transport will exceed two hours.

**Patients whose symptoms improve significantly or resolve during transport will continue to be transported to a Designated Stroke Centre.

*** If symptoms persist after correction of blood glucose level, the patient is not contraindicated.

CACC/ACS will authorize the transport once notified of the patient's need for redirect or transport under the Acute Stroke Protocol.

Paramedic Prompt Card for STEMI Hospital Bypass Protocol

This prompt card provides a quick reference of the *STEMI Hospital Bypass Protocol* contained in the *Basic Life Support Patient Care Standards* (BLS PCS). Please refer to the BLS PCS for the full protocol.

Indications under the STEMI Hospital Bypass Protocol

Transport to a PCI centre will be considered for patients who meet **ALL** of the following:

1. ≥18 years of age.
2. Chest pain or equivalent consistent with cardiac ischemia/myocardial infarction.
3. Time from onset of current episode of pain <12 hours.
4. 12-lead ECG indicates an acute AMI/STEMI*:
    a. At least 2 mm ST-elevation in leads V1-V3 in at least two contiguous leads; **AND/OR**
    b. At least 1 mm ST-elevation in at least two other anatomically contiguous leads; **OR**
    c. 12-lead ECG computer interpretation of STEMI and paramedic agrees.

*Once activated, continue to follow the STEMI Hospital Bypass Protocol even if the ECG normalizes.

Contraindications under the STEMI Hospital Bypass Protocol

ANY of the following exclude a patient from being transported under the STEMI Hospital Bypass Protocol:

1. CTAS 1 and the paramedic is unable to secure patient's airway or ventilate.
2. 12-lead ECG is consistent with a LBBB, ventricular paced rhythm, or any other STEMI imitator.
3. Transport to a PCI centre ≥60 minutes from patient contact.**
4. Patient is experiencing a complication requiring PCP diversion:**
    a. Moderate to severe respiratory distress or use of CPAP.
    b. Hemodynamic instability or symptomatic SBP <90 mmHg at any point.
    c. VSA without ROSC.
5. Patient is experiencing a complication requiring ACP diversion:**
    a. Ventilation inadequate despite assistance.
    b. Hemodynamic instability unresponsive/not amenable to ACP treatment/management.
    c. VSA without ROSC.

**The interventional cardiology program may still permit the transport to the PCI centre.

CACC/ACS will authorize the transport once notified of the patient's need for bypass under the STEMI Hospital Bypass Protocol.

RPPEO Sepsis Notification Tool

Minimize time on scene, and **notify receiving hospital** if you identify the following:

CRITERIA 1

CURRENT INFECTION
- urinary tract
- pneumonia
- recent post-op
- cellulitis, etc... (*not a complete list)*

OR SUSPICION OF INFECTION and **known immunocompromised**:
- active chemo,
- transplant patient,
- HIV, etc... (*not a complete list*)

CRITERIA 2

History of fever, or present temperature > 38.3°C

CRITERIA 3

Signs of hypoperfusion, 2 or more of
- SBP < 90
- HR ≥ 100
- RR ≥ 24
- Altered LOA/LOC, etc...

Did you know? Studies have demonstrated decrease in mortality associated with prompt recognition and early antibiotics administration

NOTIFY HOSPITAL of suspected septic patient.

Use SBAR(R)!

REMEMBER: Decreased time to antibiotics is the goal!

REGIONAL PARAMEDIC PROGRAM FOR EASTERN ONTARIO

SBARR

Don't forget: **reason for patch!**

Date: _____ Time : _____ Paramedic #:_____ ☐ ACP ☐ PCP

Pt Age: _____ Sex: ☐ M ☐ F Weight: _____

Situation

History:

BP: ___/___
HR: _____
RR: _____
Sat.: _____
GCS: _____
Temp: _____
BS: _____
Skin: _____

Background

Past Med History:

Medications:

Allergies:

Physical Examination:

Assessment *of patient/situation & working diagnosis*

Treatment(s) provided by Paramedic and Response:

Physician Orders:

Recommendations */ Requests*

Readback

Receiving Hospital:	ETA	
MD Name (Print)	MD #	MD Signature

Revised: June 15 2009

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Medication Safety Starts with You

When you see the "5Rs" symbol throughout this guidebook, it is a reminder to always confirm:

- RIGHT PATIENT
- RIGHT DRUG
- RIGHT DOSE
- RIGHT ROUTE
- RIGHT TIME

REGIONAL PARAMEDIC PROGRAM FOR EASTERN ONTARIO

LAST REVISED 2019-12-01
ALS PCS v4.6.1